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ANNEX

ANNEX

HOWARD FRY

THE

CLIMATE OF LONDON,

DEDUCED FROM

Meteorological Observations,

MADE IN THE METROPOLIS,

AND AT

VARIOUS PLACES AROUND IT.

BY LUKE HOWARD, GENT.

CITIZEN OF LONDON; HONORARY CITIZEN OF MAGDEBURG; FELLOW
OF THE ROYAL SOCIETY, AND HONORARY ASSOCIATE OF THE
SOCIETIES OF ARTS OF HAMBURGH AND LEIPSIC.

IN THREE VOLUMES.

A SECOND, MUCH ENLARGED AND IMPROVED, EDITION,

IN WHICH THE

OBSERVATIONS ARE CONTINUED TO THE YEAR MDCCCXXX:

ILLUSTRATED BY ENGRAVINGS ON WOOD AND COPPER.

Sic vos non vobis mellificatis apes!

VOL. II.

Containing the Observations from 1806 to 1819, [those by the Clock Barometer included from the beginning of 1815,] with copious Notes, Extracts in illustration from other sources, and occasional pieces of Dissertation.

LONDON:
HARVEY AND DARTON, GRACECHURCH-STREET;
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1833.

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Meteorological Observations,

MADE AT

PLAISTOW, NEAR LONDON,

IN THE YEARS

1806, 1807, 1808, AND 1809,

ARRANGED IN LUNAR MONTHS.

(First published Monthly, in part, in the Athenæum.)

TABLE I.

1806.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N.M. 11 mo. *a.* Nov. 10	N	30·10	30·10	48°	40°			—	
11	SW	30·10	29·98	50	33			4	
a. 12	SW	——	——	47	34			—	
13	SW	30·18	29·98	57	48			4	
14	SW	29·98	29·86	53	48			3	1
15	SW	29·86	29·70	53	37			6	1
16	SW	29·88	29·70	48	39			10	
b. 17	SW	29·82	29·70	53	43			8	
18	SW	29·70	29·58	55	47			11	4
d. 19	SW	29·25	29·01	51	35			7	63
20	SW	29·34	29·04	47	35			15	
b. c. 21	SW	29·33	29·00	45	31			8	2
b. c. 22	W	29·63	29·33	43	27			4	
b. c. 23	SW	29·83	29·46	51	33			2	2
24	SW	29·83	29·65	56	52			8	
25	SW	29·46	29·26	57	47			8	3
26	SW	29·88	29·46	50	39			4	18
27	NW	30·01	29·90	56	41			0	17
28	SW	30·04	29·64	60	54			8	2
e. 29	SW	29·69	29·53	58	36			20	
30	W	29·69	29·13	45	33			6	4
12 mo. *f.* Dec. 1	SW	29·13	28·63	50	38			8	30
g. 2	W	29·59	28·63	42	38			8	3
3	NW	29·67	29·63	43	31			3	2
4	W	29·67	29·45	50	38			2	2
5	SW	29·45	29·27	54	48			20	
6	SW	29·30	29·25	58	33			12	
7	W	29·03	29·00	47	38			7	6
8	Var.	29·28	29·00	45	36			0	17
9	NW	29·42	29·33	44	33			3	9
		30·10	28·63	60	27			1·99	1·86

Notes.—*a.* Misty, the trees dripping without rain.

b. Lunar halo; very brilliant on the nights of the 22nd and 26th. Two series of the prismatic colours were distinguished.

c. Hoar frost. Some hail on the 21st.

d. The barometer appeared to have descended still lower. Pretty strong signs of *positive* electricity the 18th p. m. after which very stormy from midnight to sunrise.

e. Wind NW. At 8 p. m. a slight shower, from a mass of clouds passing in the S, in which it is said to have lightened. On examination a changeable electricity was found in the insulated conductor.

f. Very stormy night.

g. Loud thunder about 3 a. m: *positive* electricity after sunrise. Soon after 2 p. m. a squall from the NW, with snow and finally rain, The conductor was highly charged *positive*, giving dense sparks. In proportion as the nimbus passed off to the SE this went off, and a weaker *negative* charge succeeded.

Additional Notes from the MS. Register.—Eleventh Mo. 27. I found the vapour point about noon but one degree below the actual temp. of the air: hence no evaporation. 30. Much wind. [*I find in my Notes an observation, that on the 3rd of this month, being a very showery day, the* rainbow *made its appearance thrice*, at morning, noon, and evening.]

Twelfth Mo. 1. The barometer took to rising again at sunrise: at 2 p. m. a squall coming on, the electricity became *negative*.

RESULTS.

The prevailing wind has been decidedly SW; often amounting to a gale, more especially in the intervals between midnight and sunrise.

Mean barometrical pressure 29·54 in.; the column almost constantly in motion.

Mean temperature, by Six's thermom. 44·6°.

Total evaporation 1·99 in. This is probably greater than the evaporation at the surface of the earth, the gauge being at an elevation of 30 feet and very much exposed to the wind.

Total of rain 1·86 in. a somewhat small amount for the season, though showers have been frequent. Rain noted as fallen by day 0·56, by night 1·30 in.

TABLE II.

1806.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain &c
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 12mo. Dec. 10	SW	29·33	29·33	43°	37°			2	1
a. 11	SW	——	——	49	39				4
a. 12	SW	29.36	29·03	55	40				3
a. 13	SW	29·35	28·98	55	44				12
a. 14	SW	29·55	29·27	52	40				51
15	SW	29·76	29·60	53	38			10	5
16	SW	29·60	29·56	55	52			7	
17	SW	29·65	29·56	55	48			8	9
18	SW	29·56	29·51	50	44			3	12
19	S	29·61	29·45	52	36			5	
b. 20	S	29·25	29·19	51	37			9	6
b. 21	Var.	29·66	29·43	49	32			2	28
b. 22	SW	29·82	29·63	55	49			10	
23	SW	29·93	29·82	56	53			7	1
b. 24	Var.	30·35	30·12	56	33			2	2
25	SW	30·17	30·00	55	38			9	1
c. 26	SW	30·19	30·10	44	42			4	
27	SW	30·10	29·85	51	42			4	
28	SW	29·85	29·50	52	42			8	
29	S	29·49	29·43	51	38			4	2
30	Var.	30·00	29·43	53	40			4	3
1807. *d.* 31	N	30·48	30·00	41	26			—	
d. 1st mo. Jan. 1	N	30·60	30·48	38	27			—	
d. 2	W	30·60	30·33	30	28			—	
e. 3	W	30·25	30·20	38	30			4	
4	N	30·46	30·25	40	33			3	
5	NW	30·47	30·45	38	22			—	
6	W	30·45	30·33	33	25			2	
f. 7	W	30·33	30·08	39	23			0	
		30·60	28·98	56	22			1·07	1·40

NOTES.—*a.* Very stormy nights. Suspecting too great an occasional effect of the wind on the evaporation gauge, these four results are omitted, and precaution taken to increase the shelter.

b. Lunar halo; succeeded (as usual) by wind, on 23rd, 24th, 25th.

c. The highest tide that has occurred (it is said) during fifteen

In the last spring-tides, the addition of heavy rain caused a considerable overflow of the River Lea. The present eleva-

ns to be independent of rain in these parts.

st. 31. Bright day quite to sunset: 1. misty: 2. very

ime. This gradation towards moisture is against the *e.* At 10 a.m. Wind W; the melted rime descended in showers from the trees. There was enough on the rain gauge to make 0·02 in. when melted. Such an amount of rain would have wetted the ground considerably; which however is *dry,* save under the trees. Rime is a peculiar *crystallization* from a freezing mist. Hence its abundance on surfaces opposed to the wind.

f. At sunrise, an unusually ruddy sky.

Additional Notes, from the MS.—20. Fine day. *Cirrus* passing to *Cirrocumulus,* &c. rather stormy evening. 21. Clear evening, wind NW, having gone round by E. 24. At noon, a sudden change of wind to N, with a shower. 31. *Cirrus* at sunset. The catkins of the filbert expand prematurely.

"On the 25th Dec. a hedge sparrow's nest was taken at Doveridge, Derbysh. with four eggs; and near Warwick, a green linnet's, with two eggs. It is worthy of remark, that the heat was the same on the 24th Dec. as on the 24th June last; on both those days the thermometer being nearly 60°."—(ATHENÆUM.)

RESULTS.

The south-west wind, which had so long reigned, yielded, just at the close of the year, to the north and west. Some frost ensued, which however had not the characters of permanence, being neither ushered in by driven snows, nor accompanied with a dry and serene atmosphere. Mean height of the barometer 29·84 in. Mean temperature 42·53°.

Evaporation in 25 days 1·07 in. Rain 1·40, of which by day 0·67, by night 0·58 in.

The effect of the late high winter temperature on vegetation must have been obvious to every one who has seen the country. To the very close of the year the grass continued to grow, the daisies to enamel the turf, and many of the inmates of our gardens (native and exotic) to thrive and blossom. Even hyacinth bulbs, left in the open ground, shot up and flowered. Ten years ago winter came on six weeks earlier, and with considerable severity.

TABLE III.

1807.		Wind.	Pressure.		Temp.		T. No.2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
New M. 1st mo. Jan.	8	NE	30·08	29·78	42°	26°			—	
	9	S	29·88	29·76	46	36			3	
	10	E	30·20	29·88	42	27			—	
a.	11	W	30.20	30·08	38	29			—	
	12	SW	30·08	29·66	45	38			4	
b.	13	NW	29·97	29·66	44	23			4	—
c.	14	W	30·03	29·97	35	13			—	—
d.	15	SW	29·97	29·66	47	15			4	9
	16	NW	29·90	29·87	51	41			4	
	17	SW	29·87	29·52	51	37			3	
	18	W	29·63	29·50	42	27			—	
e.	19	Var.	29·50	29·00	45	28			—	18
	20	SW	29·05	28·98	40	27			—	
f.	21	NE	29·20	28·80	41	27			—	2
	22	E	29·54	29·04	38	31			—	17
	23	NW	30·08	29·54	41	28			8	
e.	24	W	30.43	30·08	43	23			—	
e. g.	25	SW	30·49	30·43	27	25			—	
e.	26	SW	30·45	30·43	41	27			4	2
	27	NW	30·50	30·45	44	31			—	
e.	28	NW	30·54	30·40	43	28			—	
	29	*NW*	30·40	30·10	42	28			6	
	30	W	30·10	29·84	38	33			3	
h.	31	W	——	——	42	28			—	—
2nd mo. Feb.	1	N	29·84	29·57	35	18			—	—
	2	S	29·57	28·90	39	26			8	39
	3	W	——	——	39	28			—	—
	4	SW	29·24	28·90	40	28			7	9
	5	W	29·33	29·24	43	29			—	
	6	*SW*	29·65	29·33	45	31			9	2
			30·54	28·80	51	13			0·76	0·98

NOTES.—*a.* Misty.

b. A squall with rain at 2 p. m.

c. Snowy, p. m.

d. A faint but large solar halo for two or three hours. After sunset the wind rose, and the night was stormy with rain.

e. Hoar frost; and on the 26th, much rime with a thaw after it.

f. A very damp chilling atmosphere, there being a prodigious quan-
of cloud, but as yet no wind or rain answerable to the great de-
sion of the barometer.

ry foggy evening. It appears from the papers that a great
d occurred about Exeter on the 22nd.

h. This day, about noon, the haze which had long occupied the higher atmosphere, became arranged in broad parallel bars of *Cirri*, extending NE and SW beyond the horizon. In the latter quarter was some appearance of denser clouds forming below the haze. The evening proved calm, with sunshine; but there followed in the night a brisk gale with heavy rain and snow, from the north. The latter fell also, but in small quantities, on the 2nd, 3rd, and 4th of 2nd month.

RESULTS.

Prevailing Winds Westerly.

Mean elevation of barometer . . .	29·78 in.
Mean temperature	34·75°
Evaporation	0·76
Rain	0·98 in.

The character of this period has been on the whole frosty, the temperature having usually fallen at night below 32°, though the vaporous state of the atmosphere has given occasion to frequent remissions with rain. Of this there fell by day 0·17, by night 0·31: the remainder was not divided.

The gravity of the air has undergone some notable changes. From the 1st to the 24th of 1st mo. the result of its frequent variations was a loss on the whole equal to 1½ in. of quicksilver. In four days, from the 20th, this quantity was restored, the rapid movement necessary to this effect being chiefly felt, as it seems, on the south coast. The increase was retained just four days; and in four days more, the whole, except the weight of two-tenths of an inch in the barometer, was again parted with. These effects resemble the increase, continuance, and subsiding of an inundation; and possibly the cause of this sudden swell may have been the meeting, [or rather the pressing upon each other,] of simultaneous currents from the north and south, which, after taking some time to unite and assume a new direction, passed off to the eastward.

TABLE IV.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 2d mo. Feb. 7	NW	29·85	29·67	43°	28°			6	6
8	SW	29·58	29·50	48	36			4	10
a. 9	SW	29·53	29·28	52	37			11	4
10	W	29·77	29·65	51	39			10	
11	W	29·98	29·77	57	49			11	
12	SW	30·15	30·15	57	38			11	
13	SW	30·18	30·15	53	38			5	
14	Var.	30·15	30·03	54	31			6	
b. 15	S	30·03	29·87	54	37			7	
c. 16	SW	29·72	29·64	55	37			3	—
d. 17	Var.	29·49	29·33	45	24			—	—
18	N	30·06	29·49	29	23			—	—
e. 19	Var.	30·18	30·11	35	22			—	
20	SW	30·11	29·73	46	34			17	10
21	W	29·72	29·67	46	35			10	
22	W	29·69	29·57	49	32			8	1
f. 23	NW	29·88	29·69	44	23			6	
g. 24	W	29·69	29·48	51	34			8	11
25	SW	29·68	29·47	56	34			5	2
26	NW	29·92	29·68	39	25			7	
h. 27	N	30·38	29·92	37	26			2	
h. 28	N	30·56	30·38	38	27			5	1
3rd mo. March 1	NE	30·56	30·50	42	31			4	
2	NE	30·50	30·17	44	35			5	1
3	Var.	30·17	29·84	44	31			5	
4	N	29·84	29·83	43	23			—	
h. 5	N	——	——	33	19			—	
h. 6	W	29·86	29·66	38	23			10	11
h. 7	N	29·97	29·77	40	23			—	
8	W	29·77	29·30	45	31			8	5
		30·56	29·28	57	19			1.74	0·62

Notes.—*a.* A gale of wind.

b. A very fine day. A thermometer against a wall facing the south rose to 87°. [The occasional early opening of the apricot blossom need not surprise us, if we consider this degree of heat upon the wall.] About sunset the clouds came down as in summer evenings before thunder.

c. A very large and distinct lunar halo.

d. Stormy indications at sunset, followed by a severe and destructive
the NE, which was not over till the next night; much
tween 3 and 4 a. m. the 18th; abundance of snow fell on
ts of the country, though but a moderate quantity

e. The whole hemisphere was very red for some time after sunset, which we ascribed to the reflection of light from elevated *Cirri.*—The phenomenon was repeated on the 21st, which, with the preceding and following night, was windy.

f. The *Cirrus* cloud continues to fill the higher atmosphere, and is now collected into parallel bars extending E and W beyond the horizon.

g. Hoar frost, with a strong positive electricity; which was found again at sunset in some rain, mixed with sleet.

h. Small quantities of snow at intervals; the atmosphere sensibly tending to a state of greater dryness.

Additional Notes from the MS.—Second Mo. 7. At sunset the shadows of large *Cumuli* were projected on the haze above them, and there was a bank of *Cirrus* and *Cirrostratus* in the W. 8. *Cirrostratus* at sunset, finely divided and wavy. 17. At sunset, a bank of *Cirrostratus* obliquely crossing some *Cirri* which pointed northward. 21. Very red *Cirri* at sunset. 26. A complete evaporation of the denser clouds in the evening. 27. A brilliant morning.

Third Mo. 7. *Cumulus* and *Cumulostratus,* which nearly evaporated at sunset, leaving a red haze. 8. Overcast for rain.

RESULTS.

Prevailing Winds Westerly.

Mean elevation of the barometer . .	29·86 in.
Mean temperature	38·21°
Evaporation	1·74 in.
Rain, &c.	0·62 in.

Character of the period, frosty: with a dry atmosphere for the most part.

Rain noted by day 0·10, by night, 0·25 in.

An immense ball of fire was observed at Glasgow on Friday night, the 6th of March, fifteen minutes before ten o'clock, directing its course (seemingly) from SE to NW, with a very long streaming tail, and, towards the end, of a sparkling appearance. (Philo. Magazine.)

TABLE V.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 3d mo. Mar. 9	NE	29·93	29·30	39°	29°			9	9
a. 10	NE	——	——	38	28			11	
a. 11	NE	30·20	29·93	37	31			16	
12	NE	30·17	30·13	42	34			16	
a. 13	NE	30·13	30·06	45	31			11	
a. 14	N	30·06	29·92	39	26			3	
a. 15	NW	29·98	29·84	40	18			7	
16	NW	29·40	29·33	37	26			—	
b. 17	NW	29·43	29·28	42	28			14	1
18	SW	29·60	29·28	52	28			14	
19	SW	29·97	29·60	49	26			12	
b. 20	W	30·14	29·97	51	31			9	
b. 21	Var.	30·33	30·14	60	36			4	
22	E	30·44	30·33	54	31			15	
23	E	30·41	30·33	42	28			—	
24	NE	30.41	30·29	42	28			—	
c. 25	NE	30·29	30·18	44	33			52	
a. 26	N	30·18	29·79	42	35			5	2
a. 27	N	29·79	29 70	43	35			7	
a. 28	NE	29·69	29·68	42	33			7	
a. 29	NE	——	——	45	28			—	
a. 30	NE	29.78	29·63	42	29			—	
a. 31	Var.	29·47	29·43	48	29			22	33
4th mo. April 1	NE	29·68	29·47	48	31			4	
a. 2	N	29·77	29·68	34	27			0	4
3	N	30·06	29·77	42	22			—	
4	SW	30·18	29 93	45	23			13	
5	SW	——	——	50	24			—	
6	SW	30·02	30·00	50	24			14	
d. 7	Var	30·15	30·00	57	34			7	
		30·44	29·28	60	18			2·72	0.49

NOTES.—*a.* Snow, in very small quantities till the 31st, when it was more plentiful, and followed by rain. On the 2nd the trees and shrubs were much loaded all the forenoon, and it lay in the drifts several days.

b. Lunar halo.

About 8 p. m. a steady light in the NW, probably *Aurora Borea-*
lisappeared gradually after a flash of lightning in the SE. There
uds in each quarter, but of no great density. *Dies albo cal-*
dus! not, however, on account of the weather, but for the
nt of a long deferred national act of justice in the abo-
re Trade.

d. A fine spring day. Bats begin their usual excursions in the twilight. Considering that these animals pursue small insects by the sense of *hearing* alone, their agility is surprising; and the silent motion of their leathern wings is admirably adapted to the purpose.

Additional Notes from the MS.—Third Mo. 10. Frequent light showers of granular snow, (or the *nuclei* of hailstones.) 15. A little opake hail. 18. a. m. *Cumulus* clouds with a veil of *Cirrus* above: windy, with a little rain at sunset. 21. A light breeze varying from W by N to E. 22. A steady breeze E. 25. Idem NE. 26 to 31. *Cumulostratus* daily, with a clear sky above, and now and then, granular snow.

RESULTS.

Prevailing Winds between North and East.

Mean elevation of barometer	29·94 in.
Mean temperature	36·28°
Evaporation	2·72 in.
Rain and snow	0·49 in.

Character of the period dry, frosty, and cloudy, with a high degree of transparency in the lower air. Rain, &c. by day 0·03, by night 0·42.

TABLE VI.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 4th mo. April 8	SW	30·23	30·15	63°	30°			5	
a. 9	S	30·23	29·98	61	39			19	
b. 10	SW	——	——	55	43			—	
11	SW	29·98	29·30	57	45			32	
c. 12	SW	29·30	29·25	59	42			22	
d. 13	Var.	29·28	29·22	59	33			10	
14	Var.	29·28	29·25	61	44			7	16
e. 15	NE	29·39	29·28	51	39			10	
16	Var.	29·66	29·39	43	37			10	
f. 17	N	29·78	29·77	42	25			—	—
18	N	29·87	29·78	46	28			11	—
g. 19	NE	30·12	29·87	50	29			11	1
20	NE	30·16	30·12	45	30			12	
21	SE	30·12	29·95	51	29			7	
22	S	29·89	29·88	51	41			9	
23	SW	——	——	62	43			—	
24	Var.	30·08	29·89	60	47			—	
25	E	30·17	30·02	69	40			34	
h. 26	E	30·10	30·06	68	41			25	
i. 27	SW	30·03	29·98	80	52			35	
28	W	30·03	30·02	70	49			13	
k. 29	NE	30·02	29·88	72	46			17	
30	E	29·88	29·75	73	49			32	
5th mo. May 1	E	29·75	29·70	78	50			24	
l. 2	Var.	29·67	29·63	79	49			21	
3	Var.	29·63	29·60	71	49			16	22
4	E	29·60	29·34	58	50			5	15
5	SE	29·34	28·98	71	51			12	30
6	SW	29·09	28·90	61	49			21	1
		30·23	28·90	80	25			4.21	0·85

NOTES.—*a.* A serene atmosphere, with a strong *positive* electricity the whole day. The pith-balls of the conductor diverged half an inch.

b. Windy, with a little rain, which was *negative.*

c. Barometer stationary about twenty hours, the air *positive.*

d. About 9 p. m. a meteor passed from the zenith to the south; there fell much dew in the night, and rain followed in some quantity.

e. A single swallow on the wing.

Several more of these harbingers of warm weather; which, how-

h a most inhospitable reception in a storm of snow and

t part of the day.

g. Many distinct *Nimbi*, p. m. traversing the country in different quarters, and discharging showers of *hail*, which was highly electrified. One of these, being carefully examined throughout, presented the following phenomena. While the cloud was on the horizon in the NE, and the shower behind it, the pith-balls of the insulated conductor remained in contact. When the extremity of the upper surface of the inverted cone of cloud had arrived in the zenith, they opened *negative*, and diverged slowly to full two inches, at which time pretty strong sparks were drawn from the conductor. During the remainder of the approach of the shower, they gradually closed again. At the moment when the latter began to touch the observatory they opened *positive*, diverged more speedily, and the apparatus gave strong sparks for a considerable time *positive*. As the cloud drew off to the SW, this charge gradually ceased, and the balls opened again *negative*, diverging gradually as before, then converging, and lastly were left a little charged *positive*. The reader who is conversant in electrical phenomena will see in all this the natural effects of the high positive charge in the column of falling hail, which might be six or seven miles in diameter, and which appeared to be surrounded with a negative *area*, extending into the dry atmosphere about three miles in every direction. Could the descent of the electric fluid have been rendered as obvious to our senses over the whole tract, as was that of the hail, its conductor, we should have pronounced it a shower of fire rather than of ice; for the latter, when melted into the rain gauge, made not more than one hundredth of an inch along with several previous showers.

h. First notes of the cuckoo.

i. About 9 p. m. a sudden shower, which gave to the conductor a strong *negative* charge continuing some time after it. The air before was *positive*.

k. A mist from the Thames.

l. After repeated indications of strong electricity in the clouds for some days past, thunder was heard at intervals, in a *Nimbus* situated in the W and NW. Signs of negative electricity followed for a few minutes only, when the edge of this cloud approached us. Soon after a breeze coming on from SW., this, with other clouds of the same kind, which had formed in the E, S, and SW, drew off to the northward, where they remained visible on the horizon till late at night, the lightning playing among them almost incessantly. Much rain followed on the ensuing days, which was several times examined, and found *positively* charged.

Additional Notes from the MS.—Fourth Mo. 9. Very serene and warm, Cirri pointing N, and *Cirrostratus, evening;* the wind brisk. 10. Cirrostratus in abundance the whole day. 12. At sunset the *Cumuli* evaporated: *Cirrus* and *Cirrostratus*, with much dew, succeeded.

Fifth Mo. 5. Rain the whole evening; at first non-electric, then strongly positive at intervals.

Thunder Storms.

At Poulton-in-the-Fylde, Lancashire, and the neighbourhood, on Thursday the 20th of April, and the two following days, there was the most tremendous thunder and lightning ever remembered by the oldest persons; on Friday, particularly so. As a girl, aged thirteen, was returning from school, in Poulton, about seven in the evening, she was struck dead within half a mile of the town: her bonnet, cloak, stockings, and shoes, were burnt or torn in pieces, several parts of which were carried into the hedge; she had a gallon of rum in a stone bottle, wrapt up in her apron, which there is no doubt exploded, as several pieces were found at a considerable distance from the spot. Two sheep were killed near Poulton, and the ground near where they lay was perforated in several places, and burnt.—Great Marton Mill had three of its sails shivered in pieces, and the top set on fire; a large iron chain, which draws up the corn, was melted, [more properly *welded*, the links being drawn together by the weight below] to a rod of iron, and as the bottom did not reach to the floor, considerable damage was done below it, such as tearing up the boards, &c.—On the same day, there was a dreadful thunder storm at Preston, attended with vivid and continued lightning, a fall of rain so heavy as to be compared to the setting in of the rainy season in Africa, and hail so large, that some of the stones measured three inches in circumference; it broke windows and skylights innumerable.— The storm was also severely felt at Lancaster, York, and many other places.—At Bakewell, in Derbyshire, hailstones fell, intensely frozen, from two to four inches round, and many windows were broken.

The inhabitants of Silkstone, near Penistone, Yorkshire, were visited by one of the most alarming phenomena ever remembered. The clouds had portended rain, but none had then fallen there, when suddenly a torrent of water deluged the town, which is situate in a valley, and several persons were unfortunately drowned. The greatest transition from cold to heat ever remembered had been observed in the last week in April, and the above inundation was occasioned by a mass of clouds, during the thunder storm, bursting in a field in the township of Bradfield, the waters taking their course down the Rivelin and Loxley, and thence into the Dun, which became suddenly swollen. Near Doncaster it is said to have risen nine feet in the space of an hour and a half. A great number of windows were broken, at Heckleton, during a severe hail storm the same evening. Pieces of ice of an oblong form exceeding five inches were picked up.—(Athenæum.)

Process employed in the Maconnais of France to avert Hail and dissipate Storms.

(Mag. Encyclopedique, T. 2. p. 5.*)*

This process, which is now universal in the part of France named in the title, was originally introduced by the Marquis of Cheviers, a naval officer; retired on his estate at Vaurenard, about 35 years ago, who having recollected to have seen the explosion of guns resorted to at sea in order to disperse stormy
ds, resolved to attempt a similar method to dissipate the hail storms,
ravages he had often witnessed. For this purpose he made use of boxes
der, which he caused to be fired from the heights on the approach of
ed the happiest effect, and he continued till his death to pre-

serve his lands from the ravages of hail storms, while the neighbouring villages frequently experienced their baneful effects. He consumed annually between 200 and 300lb. of mining powder. The inhabitants of the communes where the estate of the Marquis was situated, convinced of the excellence of the practice, from the experience of a great number of years, continued to employ it. Their example was followed by the surrounding communes; and the practice gaining ground, it is at this moment in use in the communes of Vaurenard, Iger, and many others. The size of the powder boxes, their charge, and the number of times they fire them off, vary according to circumstances, and the position of the places. In the commune of Fleury they use a mortar which carries a pound of powder at a charge; and it is generally upon the heights, and before the clouds have had time to accumulate, that they make the explosions, which they continue until the stormy clouds are entirely dissipated. The annual consumption of gunpowder for this purpose, from the magazine at Macon, is from 1300 to 1600lb.—(Athenæum.) [In putting in practice this mode of preventing *partial damage* to the crops, it should be considered whether the *fertilizing rain* may not also, for the time, be driven from the district.]

RESULTS.

Winds variable. Mean elevation of barometer 29·73 in. Its movements offer nothing remarkable, the rain having been preceded as usual by continued depressions of the column.

Mean temperature . .	51·12°
Evaporation	4·21 in.
Rain, &c.	0·85.

The most prominent feature in this period is the almost constant strong electrisation of the atmosphere, which terminated, though not in this part of the country, in violent thunder storms. Rain by day 0·30. By night 0·54.

TABLE VII.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N. M. *a.* *b.* 5 mo. May 7	SW	29·58	29·13	58°	44°			15	2
c. 8	SW	29·58	29·27	57	49			11	24
9	Var.	29·30	29·23	58	46			7	11
b. 10	Var.	29·80	29·30	51	41			7	19
d. 11	Var.	29·80	29·56	59	48			6	33
e. 12	SW	29·44	29·38	59	52			13	—
13	Var.	29·70	29·44	64	46			11	37
f. 14	SW	29·72	29·60	56	49			4	30
g. 15	SW	29·79	29·72	64	45			10	12
16	SW	30·09	30·06	—	—			—	
17	*SW*	30·15	30·14	—	—			—	
18	*SW*	30·28	30·27	69	41			53	
19	NE	30·30	30·18	59	44			14	
20	NE	30·18	30·02	62	45			16	
21	NE	30·10	30·09	—	—			—	
22	NE	30·13	30·10	68	42			61	
23	E	30·10	29·93	75	49			32	
24	E	29·93	29·70	82	52			28	
h. 25	Var.	29·82	29·77	85	56	82	57	—	
i. 26	SW	29·72	29·66	70	54	70	53	60	
27	*NW*	29·95	29·86	63	46			—	
k. 28	*NW*	29·97	29·87	—	—			—	—
l. 29	NW	29·74	29·70	63	39			—	—
m. 30	E	29·75	29·62	55	42	50	39	48	60
31	E	29·80	29·78	54	46	55	44	13	—
b. 6th mo. June 1	S	29·83	29·78	63	45	61	44	7	21
n. *b.* 2	Var.	29·89	29·88	68	49			9	1
3	NW	30·06	29·89	70	47			12	
4	NW	30·06	30·03	66	47	68	45	10	
5	Var.	30·03	29·88	68	52	67	52	11	23
		30·30	92·13	85	39			4·58	2·73

NOTES.—*a.* Strong *positive* electricity in the intervals of the showers. A pair of pith-balls, loaded with lead, so as to weigh ten grains, and suspended from the conductor by threads of the length of seven inches, exhibited a curious phenomenon. Besides the waving motion, during their divergence, which is not unusual, there was a sensible impulse of the fluid downward upon the balls, causing the threads to quiver incessantly like an insect's wing.

b. Rainbow.

Much wind at SW. *Negative* electricity, from a *Nimbus* going S.

d. At 6 p. m. changeable electricity, from a *Nimbus* in the N, in which it thundered.

e. A strong wind at SW with much *scud,*[*] the rain strongly *positive.*

f. Almost incessant rain, which was void of all signs of electricity.

g. Rain still non-electric, and the air strongly and variably charged in the fair intervals.

h. Lightning in the W.

i. After a constant exhibition of the *Cirrus* cloud for several days past, with much dew, the latter deposition is suspended, and the sky overcast and threatening.

k. Hoar frost this morning, and a *Stratus* on the river and meadows after sunset.

l. Very stormy night; the newly expanded foliage suffered much.

m. Rain the whole day.

n. Strongly positive atmosphere.

Additional Notes from the MS.—Fifth Mo. 7. The bow appeared very bright and perfect twice; at 4 and 7 p. m. 26. For five days past the *Cirrus* cloud has appeared over the whole sky, with the points directed upward.

Sixth Mo. 4. The clouds, which have become daily more dense, now show for thunder: there are wanting however the concurrent indications of active electricity, and a temperature above 80°. A few drops of rain to-day were wholly unelectrified.

RESULTS.

Winds Variable.

Mean elevation of barometer	29·78 in.
Mean temperature	55·41°
Evaporation	4·58 in.
Rain	2·73

There have been almost continual indications of an active state of the atmospheric electricity; a result which seems naturally allied to the variable state of the currents, and a much greater deposition of water than is usual at this season. Rain noted as by day 1·38, by night 0·56. The following heights of the barometer are taken from the Philo. Trans. and are *not* reckoned in the *mean:* viz. May 16. 17. 18. 21. 25. 27. 28. 29.

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[*] Loose shapeless portions of cloud moving swiftly in the lower current of the atmosphere.

TABLE VIII.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 6th mo. June 6	Var.	29·88	29·58	62°	48°	60°	48°	4	91
a. 7	SW	29·57	29·55	67	51	62	49	6	2
b. 8	SW	29·68	29·57	68	52			19	
9	SW	29·93	29·68	68	45	64	41	23	
c. 10	SW	29·95	29·92	65	57	64	55	16	6
c. d. 11	SW	30·10	29·90	70	44	67	46	16	
c. e. 12	W	30·15	30·10	69	44	62	49	17	
13	W	30·10	30·05	69	46	69	49	20	
14	SW	30·05	29·90	70	46	74	48	13	
f. 15	Var.	29·90	29·62	78	48	76	50	21	
g. h. 16	W	—	—	74	46	73	49	—	
g. 17	NW	29·95	29·62	68	49	68	50	44	
18	NW	30·16	29·95	67	43	68	46	14	
19	NW	30·17	30·16	66	42	63	44	12	
20	NW	30·28	30·09	69	47	68	41	16	
i. 21	NW	30·18	30·10	72	53	75	53	16	
22	NW	30·02	30·00	74	53	75	55	—	
k. 23	Var.	30·00	29·92	67	51	72	54	35	
24	Var.	29·92	29·76	71	47	74	48	21	
25	NE	29·81	29·76	75	54	76	55	—	
26	NW	29·88	29·76	79	54	78	55	36	
l. 27	NW	29·92	29·90	74	54			17	
28	NW	29·90	29·86	69	43	73	45	14	
m. 29	NE	29·86	29·81	69	46	68	44	13	
30	N	29·81	29·79	65	52	66	52	10	
n. 7th mo. July 1	W	29·85	29·81	65	48	64	48	9	
i. 2	SW	29·81	29·81	71	54	71	55	26	
3	W	29·86	29·81	64	54	63	55	11	
4	Var.	29·93	29·86	66	45	68	49	8	
		30·28	29·55	79	42	78	41	4·57	0·99

Notes.—*a.* Thunder at intervals.

b. Some lightning in the evening.

c. c. c. Much wind by night.

d. Slight solar halo.

e. Hoar frost.

f. A beautiful display of the *Cirrus* cloud all day.

g. g. Some indications of a tendency to thunder. The rod was rged *negative*, but the clouds at length passed off to NE.

risk winds.

wind went from NW by E to SW.

l. Clouds highly coloured at sunset. The wind, as usual after this appearance, veered eastward.

m. A *Stratus* on the river and meadows this morning, owing, probably, to the sudden depression of the nocturnal temperature.

n. Abundance of *honey dew* on the elms and limes, as well as on the fruit trees.

Lisbon, June 12, 1807.—" On the 6th instant, at ten minutes before four in the afternoon, a dreadful shock of an earthquake was felt here, which lasted about eight seconds; it was more severe than the great one in 1755, but, thank God, not so fatal, a few lives only are lost, but a number of houses damaged."

Another account states, that the shock took place about four o'clock in the afternoon, and lasted about twelve seconds. The shock was so severe, that several houses were much damaged, and the city thrown into the greatest confusion. It was not known that any lives were lost, but several had their arms and legs broken, &c. by jumping out at the windows, under the apprehension of the houses falling upon them. The shock was also felt at St. Ubes, Oporto, and generally throughout Portugal. It was felt on board the Lively frigate, then about eighty leagues off the rock of Lisbon.—(PUBLIC PAPERS.)

RESULTS.

Winds variable.

Mean elevation of barometer	29·89 in.
Mean temperature	59°
Evaporation	4·57 in.
Rain	0·99 in.

Character of the period fair and dry. There has been a remarkable approximation to the mean, both in the extremes of pressure and temperature, and in the daily rate of evaporation. The electricity has been nearly quiescent. Rain by day 0·35, by night 0·58 in.

TABLE IX.

1807.	Wind.	Pressure. Max.	Pressure. Min.	Temp. Max.	Temp. Min.	T. No. 2. Max.	T. No. 2. Min.	Evap	Rain, &c.
N. M. 7th mo. July 5	E	29·93	29·87	73°	48°			—	
6	NE	30·08	29·93	68	43			45	
7	E	30·19	30·08	63	39			18	
8	N	30·19	30·16	70	41			20	
a. 9	Var.	30·16	29·98	77	52			16	
10	NW	29·98	29·68	81	54			14	
b. 11	SW	29·72	29·58	78	56			—	1
c. 12	SW	29·78	29·72	79	59			53	1
13	SW	—	—	—	—			—	—
d. 14	SW	29·81	29·78	77	58			40	—
d. 15	SW	29·80	29·78	73	55			14	3
16	W	29·90	29·80	73	57			12	
17	W	29·95	29·87	76	60			18	
18	W	29·99	29·97	76	50			19	
19	SW	—	—	79	60			—	
20	W	29·81	29·78	80	54			44	
21	Var.	—	—	79	56			—	
22	Var.	29·75	29·64	87	62			54	
23	SW	29·64	29·58	81	62			—	
d. 24	SW	29·68	29·60	77	57			—	—
25	SW	29·78	29·69	82	59			—	
26	SW	29·82	29·70	77	55			82	1
27	SW	29·91	29·83	76	51			—	
28	W	29·92	29·78	81	55			—	
29	SW	29·78	29·58	81	63			—	
30	SW	29·63	29·58	72	60			90	25
31	SW	29·66	29·55	71	55			—	
8th mo. Aug. 1	S	29·80	29·66	76	47			—	
2	SW	29·77	29·75	78	55			51	
		30·19	29·55	87	39			5·90	0·38

NOTES.—*a.* The cockchaffer begins to appear in great numbers. A *cat* is observed to pursue these insects every evening, feasting on them with avidity.

b. After considerable appearance of a strong electricity in the clouds, which yet did not affect the insulated rod, several *Nimbi* formed suddenly about 5 p. m. from one of which fell a shower in large *warm* drops strongly *positive.* Some thunder and lightning fol-owed, during which the rod was highly charged, but the kinds were noticed. The wind by the vane continuing strong at E, the louds moved directly N, and the sky cleared overhead: but there remained a bank of clouds but little elevated above the N horizon, in which, till eleven p. m. were the usual appearances of a thunder storm in action.—*(From the MS. Reg.)*

c. Thunder and lightning in the night, with a little rain. An ox was struck dead in the level opposite Woolwich, and found at 5 a. m. the 13th, with the hair singed and the body beginning to putrefy.

d. slight showers.

RESULTS.

Prevailing Winds West and South West.

Mean elevation of the barometer	29·81 in.
Mean temperature	66·08°
Rain	0.38 in.
Evaporation	5·90 in.

Rain by night 0·01, by day 0·35 in.

Some notice of the origin of *honey-dew,* which has abounded so as to drop from the trees, of late, may be interesting to most readers. It is well known to naturalists, that it neither falls on the leaves from the air, as its name implies, nor transpires from them; but that it is excerned by the insects of the genus *Aphis,* which inhabit the under sides of leaves, and shed this liquor on the surface of those below. This little creature seems to subsist by drawing the juices from the sap vessels, and, by a peculiarity of constitution, rejects the richer saccharine part, which afterwards affords nourishment to many other insects. Ants are so fond of it, that a whole colony may be found travelling to the highest branches of a tree in search of it; and we have seen them seize the clear drop, while yet attached to the body of the Aphis, which although defenceless, was not molested further by these predacious wanderers.

Phenomena observed by the Author, about the same season in two former years.

1805. 7th mo. 15. Wind N a little W, faint breeze. Therm. *at sunset,* 57°, barom. 29·95 in. rising. For the first time this season we had a *Stratus* in the marshes, and over it a suspicious appearance resembling *Cirrostratus,* yet not surmounting the tops of the trees; a bank of this cloud far off in the W. In the E the usual dewy haze, and much dew already on the grass.

At half past nine, with a brilliant twilight and much dew, Temp. at the observatory, top of the house, 55°; *at from three to four feet above the ground,* 49·5°; of the surface of the earth, *beneath* the cloud, in the field, 56°; of the surface in the garden, 58°; *of the water in a pond,* 59°.

All the modifications have made their appearance since yesterday evening. There has been sunshine, an overcast sky, a slight shower, and much dew. All this without a movement of an hundredth of an inch in the barometer, and the wind steady from the same point. *These phenomena are then probably to be ascribed to changes in the* [*temperature and*] *electrical state of the air.*

1806. 7th mo. 16. After sunset there appeared in the SE, opposite the sun's place, three of those extended bars of cloud, diverging [in appearance] from a point in the horizon, which I have before repeatedly observed to introduce a thunder storm. The wind was brisk at SW, and there was much haze down the river. I suspected a storm actually in progress, there having been, throughout the day, a tendency to the *Nimbus,* and in the evening several formed, the crown of one of which was extensive. 17th, a. m. We had several showers, *and much thunder twice or thrice to the eastward.* Those bars of cloudy matter, so elevated in the atmosphere as to reflect the light long after sunset, were consequently formed out of haze produced by a precipitation already begun there. At about four p. m. we had a solar halo, [another product of the same precipitation,] and at ten min. before nine, a *meteor* passed from E by S to W, at a moderate elevation. The accounts given of it vary as to its size; but it appears to have been large, to have been drawn out behind, and in the neck or narrow part of the train, to have shown the prismatic colours very brilliant. Barom. 29·55 in.

29th. At eight, p. m. after a thunder shower, there was a *Stratus* filling the valley of the Thames, and by nine covering the whole country. There was also some appearance of *Cirrostratus* on the hills to the NW. The wind N: Temp. of the air in the cloud at 8h. 50m. 61·5°; of the water in a large pond 68°; of the air at the observatory 62°: this was ascertained twenty minutes later. There were in sight several *Nimbi,* to the SSW and SE, with an abundance of the peculiar *Cirrostratus* which accompanies thunder clouds. A range of *Cirri* appeared above, and we had, within an hour, every modification except the *Cirrocumulus.*

This Stratus was, at its commencement, one of peculiar beauty, and the moon being over it, wanted nothing but the reflection of the trees, &c. in its surface, to represent a sheet of water. The *Cirri* and crowns of the *Nimbi* were tinged *flame colour.* At a quarter past nine appeared the Cirrocumulus, completing the series of the modifications.

8th mo. 14th. There has fallen, *in this moon,* rain to the amount ·ll five inches, the most part in thunder showers.

the 11th, having occasion to be out of doors from two to three,
I counted above twenty of these meteors, called *falling stars,* in
ace of an hour. They were of various degrees of brightness,
of them leaving a train of light behind. Their direction was,
t without exception, from the *zenith,* or a little below it, towards
rizon, N or S of W. *The wet weather, which had suffered an in-*
sion, was resumed with thunder, on the evening of the next day.
mo. 31. A faint, but perfectly figured bow, in a thin mist
t rain, at 6h. 45m. a. m.—*From the MS. Notes.*

TABLE X.

1807.	Wind.	Pressure.		Temp.		T. No.2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 8th mo. Aug. 3	SW	29·86	29·75	72°	50°			—	
4	W	29·90	29·86	71	53			—	
5	SW	29·89	29·78	72	57			—	
6	SW	29·78	29·75	75	58			98	1
7	NW	29·82	29·78	71	57			—	
8	Var.	29·93	29·82	65	55			—	14
9	NE	29·96	29·93	71	51			13	
10	NE	29·93	29·88	68	49			—	
a. 11	SE	29·88	29·64	75	56			38	2
12	W	29·64	29·62	79	62			—	
b. 13	SE	29·65	29·50	81	61			—	
c. 14	NW	29·85	29·50	72	57			—	93
15	W	30·00	29·85	71	60			—	
d. 16	NW	30·15	30·08	75	58			74	
17	E	30·12	30·05	79	54			—	
e. 18	E	30·05	29·89	79	56			—	
e. 19	SE	29·89	29·85	79	59			—	
f. 20	NW	29·85	29·81	75	60			56	1
21	E	29·80	29 78	78	59			—	
22	E	29·78	29·76	82	60			—	
23	SW	29·78	29·75	81	63			55	3
24	W	29·81	29·76	71	58			—	
25	W	29·90	29·81	76	56			—	
26	NW	29·91	29·90	79	51			—	27
27		29·90	29·61	81	60	81	60	47	1
28	SW	29·83	29·64	79	56	75	57	39	
29	SW	29·86	29·83	74	49	76	52	26	
30	W	29·97	29·86	70	46	69	48	19	
31	NW	30·12	29·97	61	51	59	51	5	5
9th mo. Sept. 1	W	30·15	30·12	69	45	66	47	11	
		30·15	29·50	82	45			4·81	1·47

NOTES.—*a.* Rainbow; some lightning in the evening.

b. Much lightning in the night.

c. Very heavy rain a. m.

d. A *Stratus* on the marshes.

e. Foggy morning.

f. Some thunder, p. m.; almost constant lightning in the evening.

ACCIDENTS BY LIGHTNING.

At Stockport, on the 26th, I examined a cotton manufactory, in which a re had occurred by lightning, the night before. [In coming by the mail from

Kendal to Manchester, I had watched two *Nimbi* to the S, into which this lightning was then playing.] It had fallen on the gable end of the building, about seventy feet from the ground, directed apparently to this spot by a packing press, containing much iron-work. In its way it had shivered some slates on the roof, and forced out a quantity of bricks from the wall over the window, which was also shattered. The press was much burned, being apparently set on fire by the iron-work. This effect was most conspicuous in a drawer containing loose iron, and some lead, which latter was found to have been melted. [The melting I judge to have been effected by the lightning, as the heat of the burnt surface of the drawer would not have sufficed. It carried the impression of a chisel which I found in the drawer.] The fire having been promptly extinguished, there was little damage, save the loss of some cotton.

The affixing of proper conductors to such manufactories, containing immense quantities of detached iron and brass-work, and crowded with people, cannot be too often recommended, especially such as stand alone and on elevated ground.

I conversed here also with the survivor of two men (George Bradbury and Peter Sidebotham) who were struck, near this spot, about a month before. They had been at work in a garden, and had retired for shelter from a heavy rain to a little summer-house on the bank of the Mersey, which rises here thirty or forty feet from the water. They sat back to back on a chest, with the door shut. Bradbury says he neither *saw, heard, nor felt* any thing, but on reviving found himself extended on the floor, together with his lifeless companion, [who received the stroke through the *viscera*.]

There was in the middle of the roof of this small building a lead gutter, having no metallic communication with the ground, and not more than three or four feet above their heads. A piece of fir, which was laid from wall to wall, about a foot below the gutter, was split by the stroke. The panes of the window were nearly all broken, and the glass thrown *outward*. There was a strong sulphureous smell in the place for some time. It appeared to me that the stroke had passed from the gutter on the body of Sidebotham, and from thence through the thigh of Bradbury, on which the effects yet remained, viz. an ulcer on the outer part a little above the knee, another on the inner, and a third on the calf of the leg, which by bending the knee might be brought into contact with the second. The use of the limb [thus shot through] seemed at first to be taken away, but in these parts there presently arose hard swellings which ulcerated.

Bradbury's account of the swiftness of the effect, preventing sensation, is undoubtedly correct: and it is not possible to imagine an easier death, however terrible from its suddenness, than must have befallen his companion.

RESULTS.

Prevailing Winds Westerly.

Mean height of barometer	29·85 in.
Mean temperature	64·96°
Rain	1·47 in.
Evaporation	4·81 in.

Above 1·10 in. of rain appears to have fallen by day, the remainder by day and night.

TABLE XI.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 9th mo. Sept. 2	W	30·15	30·07	70°	44°	68°	44°	15	
3	NW	30·07	29·88	72	49	69	51	20	
4	SW	29·88	29·70	69	59	71	61	18	
d. 5	W	29·70	29·37	72	55			—	
d. 6	SW	29·62	29·36	62	45			—	
a. 7	W	29·90	29·62	68	37	61	40	91	
8	W	29·92	29·65	59	45			—	
9	W	29·83	29·47	66	49			—	—
10	NW	30·03	29·83	55	39			21	65
11	W	29·90	29·80	58	41			—	
a. 12	W	29·91	29·79	61	33	55	36	31	
a. b. 13	N	29·98	29·91	54	26	54	34	10	
14	N	29·98	29·92	58	41	56	39	12	
15	NW	29·92	29·92	59	37	57	38	9	
16	NW	29·92	29·88	58	38	55	40	9	
17	N	29·88	29·87	57	30	57	29	9	
d. 18	NE	29·85	29·79	54	43	59	41	24	
d. 19	NE	30·16	29·85	61	35	59	33	18	
d. 20	W	30·16	30·01	59	51	58	46	—	
d. 21	SW	30·01	29·72	61	54	60	54	25	7
22	SW	29·72	29·56	60	54	59	54	6	24
d. 23	S	29·56	29·49	61	54	62	53	8	10
24	S	29·52	29·41	66	47	66	48	13	
d. 25	Var.	29·45	29·37	63	46	62	45	8	23
d. 26	SW	29·49	29·45	66	47	61	46	—	13
d. 27	SW	29·46	29·42	66	52	64	52	30	5
d. 28	Var.	29·91	29·46	60	41	59	41	11	
29	E	29·91	29·45	61	45			—	
30	W	30·16	29·46	59	39			18	
		30·16	29·36	72	26	69	33	4·06	1·47

NOTES.—*a.* Hoar frost.

b. This night put a period to the growth of the more tender vegetables, as potatoes, kidney beans, &c. where they lay exposed. The cucumbers were quite killed. This very low temperature (for the season) was confined to a small height, and was detected by exposing the thermometer horizontally four inches above the turf. In its usual position, six feet from the ground, it had not descended on some pre-
s nights to 32°, though spiculæ of ice had been formed on the

ng winds.

RESULTS.

Prevailing Winds Westerley.

Mean height of barometer	29·76 in.
Thermometer	52·94°
Evaporation	4·06 in.
Rain	1·47 in.

Of which by day 0·10, by night 0·49, the remainder by day and night.

It is remarkable that the rain of this period agrees exactly in quantity with that of the last. The warm and dry weather terminated, not as usual in thunder showers, but by a sudden depression of temperature; which continuing, with the arid state of the country, constituted a sort of premature winter. The strong southerly winds which blew during the latter half of the period, brought, however, a seasonable supply of moisture, and vegetation has since revived.

Evaporation on the American Continent.

We had here [about the confluence of the Platte with the Missouri, or in lat. 41°] occasion to remark the wonderful evaporation from the Missouri, *which does not appear to contain more water, nor is its channel wider, than at one thousand miles nearer to its source:* although within that space it receives about twenty rivers, some of them of considerable width, and a great number of creeks. We are obliged to replenish the inkstand every day with fresh ink, 9-10ths of which must escape by evaporation.—*Lewis and Clarke's Travels.* Sept. 1806.

TABLE XII.

1807.	Wind.	Pressure.		Temp.		T No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 10th mo. Oct. 1	S	30·16	30·02	60°	36°	58°	40°	18	
a. 2	W	30·03	29·98	65	51	66	50	20	13
a. 3	SW	30·11	30·03	65	51			11	
a. 4	S	30·06	30·02	67	48	67	49	3	
a. 5	W	30·02	29·93	65	53	65	52	2	1
6	W	29·96	29·95	61	50	59	51	5	
b. 7	*SW*	29·95	29·75	65	54	66	55	—	
8	W	30·10	29·75	61	48			45	
9	W	30·10	30·07	59	52	57	50	—	1
10	SW	30·12	30·07	65	54	64	54	14	
11	SW	30·11	29·98	61	55			—	
12	W	30·12	29·98	62	56			—	
13	Var.	30·16	30·12	65	54	65	55	26	
c. 14	SW	30·16	30·01	69	54	70	53	10	
d. 15	SW	30·11	30·01	65	48	65	49	9	
16	SW	30·06	29·99	58	52	60	50	12	
e. 17	W	29·99	29·85	63	54	63	56	—	
d. 18	NW	30·24	29·88	62	36	60	37	24	
d. 19	Var.	30·25	29·92	61	43	60	39	8	
20	S.	29·92	29·42	65	52	64	49	15	
b. 21	Var.	29·46	29·44	61	53	65	50	15	22
f. 22	NW	29·44	29·03	63	41	57	43	4	30
23	N	29·30	29·20	50	33	50	32	5	
24	SE	29·54	29·30	56	36	55	34	5	11
25	E	29·64	29·54	56	49	54	46	9	11
26	E	29·62	29·48	53	35	57	37	—	—
27	N	29·83	29·62	52	35	51	33	6	24
28	SW	29·85	29·64	51	38	48	34	9	
f. 29	SW	29·63	29·54	54	34	53	36	—	4
30	W	29·68	29·45	53	39			11	
31	N	29·91	29·68	48	35			12	
		30·25	29·03	69	33	70	32	3·08	1·17

NOTES.—*a.* Calm clear days, with *Gossamer* and *Stratus* by night.
b. b. Windy.
c. The swallows were not seen after this day.
d. d. d. Much dew.
e. A very large and perfect lunar halo.
f. f. Stormy nights.

Additional Notes from the MS.—Tenth Mo. 1. This morning's tide (at the Laboratory, Stratford, situate on the River Lea) was remarkably high, the water rose 18 inches above the usual height of spring tides. The wind yesterday morning was very strong at W and NW, the barometer rising 7 tenths of an inch in 24 hours. 27. Rainy morning, preceded by a thick fog.

From the Journals of the French National Institution: " M. Messier has collected all the particulars he could of the violent thunder storm that occurred at Paris on the 21st of October, 1807, and the extraordinary gale of wind that came on the next day. In his journal, which he has kept for fifty years, he finds nothing equal to them: but on the 3d November following, there was a storm as violent, during which the church of Montevilliers was struck by lightning."

Barometer at Paris on the 19th at noon 30·29 inches (English), on the 22d 29·31, and on the 23d in the morning 29·12: this was a very wet day there, with the wind strong at S; while with us, *with the same state of the barometer*, it was N and fair. A low state of both barometer and thermometer ensued with them as with us, for some time after.

Rain in this month at Manchester, 2·37 in. Mean of barometer 29·65 in.

Hanson.

RESULTS.

Winds Variable.

Mean height of barometer . . .	29·84 in
Thermometer	53°
Evaporation	3·08 in.
Rain	1·17 in.

Of which there fell by night 0·38 inches, the remainder was not divided

TABLE XIII.

1807.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min-	Max.	Min.	Max.	Min.		
11th mo. Nov.	1		29·90	29·66	55°	43°			—	
a.	2	SW	29·66	29·20	53	39			—	
	3	SW	29·30	29.21	47	37			36	17
	4	W	29·56	29·30	49	33			17	
b.	5	SW	29·43	29·31	52	36			7	
	6	W	29·48	29·20	49	41			13	47
	7	SW	29·26	29·14	50	41			9	34
	8	*S*	29·35	29·16	46	32			—	
	9	*SW*	29·47	29·35	44	33			—	
	10	*SE*	29·40	29·01	47	33			—	
c.	11	NW	29·81	29·03	42	28			28	61
c.	12	NW	30·01	29·81	37	29			4	
	13	NW	30·04	29·99	37	31			1	4
d.	14	N	30·03	29·98	41	30			2	1
	15	NE	29·98	29·90	44	35			11	
	16	NE	29·91	29·90	43	39			8	6
	17	Var.	29·90	29·60	43	37			—	
	18	Var.	29·60	29·44	40	30			4	
e.	19	Var.	29·44	28·69	45	32			—	49
f.	20	SW	29·32	28·68	41	30			19	
	21	SW	29·54	29·32	37	25			—	
g.	22	E	29·54	29·17	45	30			5	48
	23	S	29·19	29·06	48	31			4	16
	24	SW	29·42	29·19	37	32			—	
	25	W	29·48	29·42	42	29			11	
	26	W	29·61	29·48	38	27			1	
	27	NW	29·82	29·61	33	22			—	
	28	NW	29·82	29·65	31	23			5	
			30·04	29·01	55	22			1·85	2·83

NOTES.—*a.* A very stormy night. About 3 a. m. a sudden violent gust, with hail, after which the wind fell.

b. Hoar frost.

c. c. A little snow. The water in the evaporation guage having been frozen, a small quantity of salt was now introduced to prevent its forming a solid mass. [The specific gravity of the salt water need not

1.05.]

ty a. m.

in considerable quantity for the season; which was dis-

in the course of the day.

f. A smart shower of hail, followed by heavy rain, a. m.; fair p.m.; wind very high the whole day.

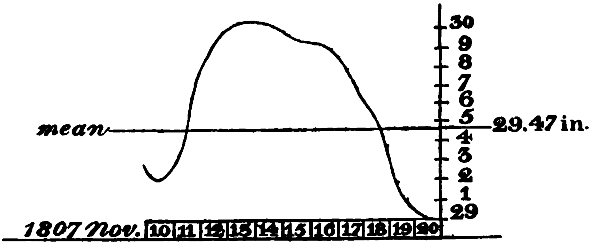
g. The earth was much hardened this morning by the frost, though the depression of temperature below 32° was not considerable. This is to be ascribed to the previous cooling it received from the melted snow.

RESULTS.

Mean height of barometer . . .	29·47 in.
Temperature	37·92°
Evaporation	1·85 in.
Rain, &c.	2·83 in.

Of which by night 1·59 in. By day 0·16 in.

The barometer has ranged for the most part below the mean, though the middle of the month is distinguished by a pretty bold curve in elevation. *(See the Fig.)* The fore part of the period was almost constantly windy; the latter very cold, with hoar frosts; the greatest depression of temperature being after sunrise.



The mean of the barometer at *Manchester* for this month, (of which our period takes in twenty-eight days,) is 29·46 inches, the mean temperature 38·20.—*Hanson.* The extremes being 52° and 19°, (each 3° lower than ours,) I suspect the mean here stated to be 3° too high, for want of a sufficient proportion of the lowest observations. The *rain,* as before, greatly exceeds ours, being very nearly five inches.

TABLE XIV.

1807.		Wind.	Pressure.		Temp		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
N M. *a.* 11 mo. Nov.	29	N	29·72	29·65	33°	30°			—	—
b.	30	N	29·95	29·72	36	30			1	
12th mo. Dec.	1	Var.	29·95	29·84	39	32			1	
c.	2	SW	29·91	29·84	44	29			4	
	3	*W*	29·96	29·87	42	32			—	
c.	4	W	29·87	29·70	47	38			—	
c.	5	SW	29·70	29·46	47	35			—	—
a.	6	W	29·55	29·48	41	27			10	
d.	7	N	29·59	29·55	35	20			—	
e.	8	W	29·76	29·50	33	19			8	16
	9	NW	30·01	29·76	34	21			—	
b.	10	NW	30·01	30·00	32	17			4	
f. b.	11	NW	30·20	30·01	38	32			—	
b.	12	W	30·25	30·20	44	31			—	—
b.	13	W	30·24	30·13	43	36			6	
g.	14	Var.	30·20	30·16	44	29			2	
b.	15	W	30·16	30·06	43	34			2	
	16	Var.	30·07	30·06	37	30			0	
b.	17	E	30·06	30·02	36	32			—	
b.	18	E	30·09	30·00	37	33			3	
b.	19	SE	30·30	30·09	39	28			0	
b.	20	Var.	30·41	30·30	31	28			0	
b.	21	NW	30·40	30·29	30	26			0	
h.	22	W	30·29	30·20	36	28			0	
b.	23	SW	30·20	30·18	36	31			—	
	24	SW	30·18	30·12	39	35			4	3
	25	SW	30·12	29·93	48	39			4	
c.	26	SW	29·93	29·72	54	45			—	
	27	SW	29·95	29·71	46	33			10	2
i.	28	SW	29·71	29·55	48	43			9	
			30·41	29·46	54	17			0·68	0·21

NOTES.—*a.* Snow at intervals.

b. Misty.

c. Windy.

d. a. m. hoar frost: p. m. large lunar halo.

e. A fall of snow unusually deep for this part of the island: during it the thermometer was three times noted in gradual ascent, *viz.* at 10 a.m. 19°; at 3 p. m. 22°; at 9 p. m. 26°; it amounted on the plain to about 6 inches: to the small depth which it exhibits in the rain-

e should be added near as much more, for loss by evaporation,

alling, before the column was melted down in the funnel.

ttle snow very early, followed by a thaw and cloudy weather.

g. Hoar frost, which speedily went off: clear morning.

h. The melting rime fell in showers from the trees, and the air cleared up.

i. The clouds highly coloured at sunrise, indicating wind; the evening proved stormy.

RESULTS.

Prevailing Winds Westerly.

Mean height of barometer . . .	29·80 in.
Thermometer	36·26°
Evaporation	0·68 in.
Snow and rain	0·21 in. *or* 0·35 in. See note *e*.

Character of this period frosty, and for the most part calm; the atmosphere turbid and almost constantly depositing moisture.

At *Manchester*, there fell in this month 2·62 inches of rain, the mean of the barometer being 29·65 inches.—*Hanson*.

MOTEOROLITES IN NORTH AMERICA.

Greenfield, Massachusets, December 10, 1807.—On Monday morning last, the 14th of December, in the vicinity of this place, several bodies of stone were discovered, which appear to have descended from the regions above.—Several pieces of this stone were shown me by different persons, by whom the fact was so well attested as to make it impossible altogether to disbelieve it. But being resolved to get the best evidence of such an extraordinary occurrence, which the nature of the case would admit, I devoted this day, in company with the Rev. Mr. Holly, in visiting the different places where these stones had fallen.

The first place we visited is about three miles and a half in a north-east direction from my house, in a lot firmly covered with grass, about twenty-five rods from the house of Elijah Seeley. The breach here made in the ground was about four feet diameter, and nearly the same depth, and in a rather sloping direction, which was occasioned by the stone striking a shelly rock and glancing. The rock on which the stone fell was much shattered, and the stone itself very much broken, the largest pieces weighing not more than six or eight pounds; the quantity altogether about a bushel. A quart or two of these fragments we gathered here; the greater part having been previously carried away by the inhabitants. By the fall and glancing of the stone, the dirt and sod were strewed two or three rods round the breach, and several pieces of sod carried before the fragments to the lowest depth to which they sunk into the earth, and were removed by myself. Mr. Seeley and his wife say, that just after day-light, they saw vivid flashes of light in rapid succession for five or six seconds; and in about a minute afterwards followed a dreadful explosion resembling three cannons fired in quick succession, ending in a cracking, rumbling noise; that about ten o'clock the same morning, going into this lot, he discovered the breach in the ground above described, and conceiving it to have been caused by something discharged from above, at the time he heard the explosion, he called his wife out to witness the facts; and in the course of the day it was visited by all the neighbourhood. Mr Seeley and his wife are sober, discreet, and intelligent persons, implicitly to be relied on.

The next place we went to view was about four miles NE from the first, in the court yard of Mr. William Prince, a respectable and wealthy farmer. The court yard is a grass plot, smooth as a carpet, and firmly trodden. Here we found a hole, about the size of a post hole, two feet two inches in depth, from which had been taken, on the evening of the aforesaid Monday, a stone weighing thirty-five pounds, the texture and appearance of which resembled exactly the one which fell at Seeley's. Mr. Prince and his wife and sons (men grown) give the same account of the flashes and explosion as was given above, with this further particular, that they heard, about a minute after the explosion, the fall of the stone, at the noise of which they were much alarmed, but could not discover the cause. After it was light Mr. Prince went out, and passing across the door yard discovered a hole in the grass plot, only twenty-seven feet from his house. The ground appeared fresh broken, and no dirt thrown out. He looked into it, but could see nothing, and no further discovery was made until evening, when his sons returned from a town meeting at Weston, where they heard of the fall of the stone at Seeley's. This induced them to examine further the hole in the court yard. On hauling out the dirt which lay loosely over the stone, they soon discovered it, and took it out entire, except some small pieces, that were broken off by stones in the ground. We examined this hole, and found the sod and grass, as in the other case, driven before the stone to the bottom of the hole, which he took up, with pieces of the stone that had not before been found. The hole was perpendicular in the earth, and in diameter no larger than the stone. A Mr. David Hubbell, a man of undoubted veracity, was passing in the street about twenty-five rods from this stone when it fell, who saw a ball of fire emitting sparks, with a tail about four feet long, shoot across the horizon in a southerly direction, and in about a minute or two afterwards he heard the explosion, which he described as the others had done; and a minute or two after that, he heard a loud whistling through the air, which made a noise like a hurricane. The same appearance and explosions were witnessed by Judge Wheeler and Russel Tomlinson, who were ten miles distant from each other; men of great candour and careful observation; but being distant from the places where these stones fell, neither of them heard the whistling just mentioned. The largest piece of the stone taken out of Prince's yard, which remains entire, weighs about eleven pounds, and is now in my possession; the rest of it has been broken into small parts and scattered among the inhabitants.

The third and last place where these stones have been discovered to have fallen, is about five miles north-east of Mr. Prince's, and seven below Newtown, near the turnpike road which leads from thence to Bridgeport.

The stone which fell there was small, and falling upon the top of a rock, that projected two feet above the ground, was dashed into small fragments, none of which weighed more than four or five ounces; and it was judged the whole of these collected would not more than have filled a quart measure.—This stone fell about thirty yards from the house of Mr. Merwin Burr; he and his wife being up, they both ran to the door the moment they discovered the flashes of light, and in a minute or two heard the same explosion as heretofore described; and in about a minute after the explosion they heard something fall near them which made quite a loud report; and in quick succession three or four other noises at greater distance, which they thought to be something falling in a swamp, twenty or thirty rods in the front of the house. Mr. Burr took a candle, and with his wife went out immediately, to see if they could find any thing in the direction where they heard the loudest report, but found nothing; when it grew lighter, and before sunrise, Mr. Burr went out again, and found the fragments of the stone which had been dashed to pieces on the rock, and which have precisely the same appearance as those found at the two former places; the swamp, being full of water, has not been explored. Besides the large piece, I have many smaller ones collected at these three different places by Mr. Holly and myself, exactly resembling each other; and from the mouths of all these witnesses I have named (except Mr. Burr, who happened to be from home) we have taken the facts just as I have here related them. The ball of fire and explosion were witnessed by hundreds in this and the neighbouring towns; and I myself, as I was returning from New York in the stage, a little on this side of Rye, at the same hour in the morning, saw vivid flashes of light, which lasted four or five seconds of time; and though the curtains were down, the stage was perfectly illuminated, but we heard no report.

This stone, I presume, possesses considerable iron, as it is strongly attracted by the needle; and I judge it is one fourth heavier than the common granite. The outside is covered with a smooth, glazed, sooty crust, as thick as foolscap, looking like the back of a chimney; and the broken surfaces are of a blueish lead colour, the whole appearing to have undergone the action of intense heat.—The body of stone which fell at Seeley's must have weighed more than one hundred pounds.—*J. Bronson.*

The following account presents an undoubted exhibition of like phenomena of a *former date; but of which the fallen products do not seem to have been discovered,* —1764. The 20th of the month called July, at about forty minutes past seven, p. m. an uncommon ball of fire was seen in the NE, about 50° above the horizon. It took its course N W: its diameter seemed as large or larger than the sun, especially at one time, when it opened so as seemingly to separate. It appeared like sheets of fire inclining together: its sound as it went, in some places, was said to resemble that of a great fire urged by a strong wind. It kept near one height all the way, till it had crossed the meridian to the N about 20°; there a small cloud seemed to attract it; mounting higher, just as it approached the outward edge of the cloud, it appeared to shatter into innumerable fragments.—Smith's History of *New Jersey*, p. 439. Ed. 1765. The place of observation, *Burlington.*

Extracts from a Paper by M. Cotte, in the Journal de Physique, tom. lxviii. p. 331, *&c. inserted for the purpose of comparison with the corresponding dates in this Register.*

1807.—*Feb.* 18. A dreadful gale with much snow on the French coast of the channel, in Flanders, Picardy, and Normandy; at Montmorency, near Paris, stormy, with snow and hail, the barometer exhibiting great variation. *March* 8. Barometer very low at Montmorency, a violent storm of wind at Mende, (in the S of France,) and on *March* 30, an earthquake in the department of Puy-de-Dôme. *April* 13. Much damage by hail, (grêle desastreux,) with thunder in the Haute Garonne, S of France. Barometer low at Montmorency. Frost and snow this month as far south as Naples, after which, in France as here, there followed excessive heat about the close of the month. *May* 26. Great hail at Tonneins. 29. Hurricane about Dijon, and in the departments to the NE: no wind near Paris, but the barometer low. *June* 6. Earthquake at Lisbon. 17. Thunder storm with very large hail at Antwerp. *July*, *August*. An extremely hot and dry season in France. *Sept.* 4, 5. Earthquake at Genoa and Naples. 7, 30. Violent storms of wind at the Hague: much wind at Paris. *Oct.* 1. An earthquake, with a storm of wind and thunder at Vienna, the barometer very low. Barometer high at Paris, with calm weather. *Nov.* 3. A great storm of wind and thunder at Montivillois, Lower Seine. 23. A furious hurricane with much rain at Bordeaux: for a week before and after which, there were frequent shocks of an earthquake at Algiers. Barometer low during this time at Paris.

TABLE XV.

1807.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N.M. *a.* 12th mo. Dec. 29	SW	29·56	29·37	53°	38°			—	—
a. 30	SW	29·37	29·32	48	35			16	
a. 31	SW	29·32	29·24	46	42			—	
1808. 1st mo. Jan. 1	S	29·24	28·93	47	39			22	28
2	SW	29·23	28·96	44	31			4	37
b. 3	SW	29·95	28·96	39	31			—	
c. b. 4	SW	29·95	29·82	45	32			5	4
5	SW	30·22	29·95	48	39			—	
b 6	SW	30·42	30·22	47	39			—	
7	SW	30·50	30·42	47	41			8	3
8	SW	30·51	30·50	44	38			—	—
f. 9	SW	30·50	30·41	45	38			—	
10	SW	30·41	29·97	48	42			—	
b. 11	NW	29·98	29·95	48	32			—	
b. 12	NW	29·95	29·81	37	31			—	
d. 13	W	29·81	29·21	45	37			16	
a. 14	SW	29·98	29·16	46	29			7	2
b. 15	NW	30·16	29·98	33	23			—	
16	NW	30·36	30·16	31	23			—	
17	NE	30·51	30·36	34	21			—	
18	N	30·51	30·26	35	24			—	
19	SW	30·26	29·66	40	34			13	2
e. 20	NW	29·82	29·66	40	20			—	
e. 21	NW	30·19	29·82	27	12			—	
g. 22	SW	30·19	30·05	31	14			—	—
23	SW	30·05	29·87	38	30			9	1
f. 24	Var.	29·87	29·45	37	31			—	
f. 25	Var.	29·45	29·25	34	24			—	
g. b. 26	NW	29·51	29·25	33	24			5	
N.M. *g. a.* 27	SW	29·37	29·25	46	27			—	—
h. 28	*SW*	29·51	29·25	43	33			8	22
		30·51	28·93	53	12			1·13	0·99

Notes.—*a.* Strong winds: the night of 31 stormy, and that of 14 tempestuous.

b. Fine clear days.

c. a. m. (and 26th after sunset) a little opake hail.

d. *Cirrostratus* highly coloured at sunset.

e. Snow at different times.

f. Misty weather.

g. Hoar frost.

h. A smart shower mixed with hail at night.

On the 23d, at 10 a. m. a faint but nearly perfect rainbow appeared under singular circumstances. The night had been clear and frosty, and at this time a few light clouds had begun to appear in different quarters, but none *over* the place of the bow, nor was the falling mist of sufficient density to darken the face of the sky, yet it showed the rainbow. Precipitation after this went on rapidly; in thirty or forty minutes the sky was overcast, and before noon it rained a little. On the 26th, in the midst of calm sunshine, wind NW, a patch of *Cirrostratus*, in the form of the *cyma.*[*] The wind changed to SW, and blew pretty strong on the 27th, with rain.

Additional Notes from the MS.—First Mo. 6. The morning was beautifully clear, with *Cirrocumulus* and *Cirrostratus*, stretching from N to S. 14. The day was very stormy: all night the wind blew quite a tempest, the barometer rising rapidly. The weather appears to have been equally tempestuous this day at Plymouth. 23. After a little rain, a rapid thaw, continuing through the following day.

RESULTS.

Prevailing Winds Westerly and chiefly South-west.

Mean elevation of barometer	29·82 in.
Thermometer	36·98°
Evaporation	1·13 in.
Snow and rain	0·99 in.

Of which by day 0·59, by night 0·28 in.

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[*] The reader will find annexed to Table xxxv. under date of Sept. 4, 1809, a representation of this form of the *Cirrostratus*, which on that, as on the present occasion, was found to precede *rain*.

TABLE XVI.

Date.		Wind.	Pressure.		Temp.		T. No. 2.		Evap.	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
[illegible] Jan.	29	W	29·70	29·51	42°	37°			—	
	30	S	29·74	29·52	50	40			12	9
	31	SW	29·83	29·74	51	41			—	
[illegible] Feb.	1	SW	29·91	29·63	52	47			19	2
	2	SW	29·74	29·56	51	37			—	—
	3	W	30·25	29·74	43	30			13	1
	4	W	30·31	30·17	42	30			10	
	5	SW	30·17	29·94	49	35			5	
	6	W	29·94	29·79	50	44			14	3
	7	W	29·86	29·79	48	37			8	28
	8	W	29·79	29·74	39	29			—	—
	9	NW	29·98	29·79	38	27			—	
	10	NW	30·10	29·96	34	25			—	
	11	SW	29·95	29·20	47	29			—	—
	12	Var.	29.69	29·24	31	23			—	—
	13	N	30·01	29·69	30	19			—	
	14	N	30·18	30·01	29	17			—	
	15	SW	30·01	29·59	37	23			21	29
	16	NW	30·02	29·59	39	26			—	
	17	W	30·02	29·99	41	30			5	
	18	NW	30·22	30·02	43	30			4	
	19	NE	30·49	30·22	42	26			—	
	20	E	30·53	30·49	39	24			—	
	21	NE	30·53	30·50	39	29			—	
	22	NE	30·50	30·45	40	32			—	
	23	NE	30·46	30·40	38	32			32	1
	24	NE	30·71	30·45	39	28			—	
	25	E	30·71	30·61	37	24			20	
			30·71	29·20	52	17			1·63	0·73

Notes.—[illegible] At 7 h. 30 m. p. m. a brilliant meteor in the east. It was a small bright blue mass of light, with a short red train. It appeared suddenly at a moderate elevation, and after descending a few degrees with a small tendency northward, became extinct.

[illegible] stormy with rain.

[illegible] The skylark sings. About noon a warm electrical shower, giving [illegible] small sparks from the rod.

[illegible] a. m. Electric signs again, from a *Nimbus* passing [illegible] blackbird sings. A small bright lunar halo.

f. Lunar halo, consisting of a coloured circle near the moon, and a pale one much more distant.

g. Snow at intervals.

h. The wind, which was full south in the night with rain, blew furiously from the north all day, with a continued fall of snow as fine as dust, which was at length drifted to the depth, in some places, of three or four feet.

i. The sky this evening being uncommonly serene, I suspected a strong evaporation of the snow to be going on. A Six's thermometer was therefore placed horizontally upon it, in a place exposed to the wind. It descended to 6·5°, or 10·5° lower than the standard instrument at five feet elevation. The morning of the 15th was cloudy, with rime on the trees.

k. Hoar frost.

l. The clouds beautifully coloured at sunset.

Additional Notes from the MS.—Second Mo. 3. The clouds to-day and yesterday, in the intervals of the showers, assumed the bold and compound structure usual in summer.

RESULTS.

Winds Westerly to the last quarter—afterwards Easterly.

Mean height of barometer	30·02 in.
Temperature	35·91°
Evaporation	1·63 in.
Rain and snow	0·73 in.

Character of this period, variable and frosty.

Rain by night 0·28: remainder by day and night.

"*Manchester.* On Thursday the 11th Feb. it was remarkable tempestuous, particularly in the evening, with a great fall of snow, which was much drifted. The temperature was under the freezing point, and the barometer during the day, fell four-tenths of an inch. On the 21st, about seven o'clock in the evening, a luminous body was seen descending in a SW direction."—*Hanson.*

TABLE XVII.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N.M. 2nd mo. Feb. 26	Var.	30·61	30·43	39°	30°			9	
27	W	30·43	30·41	48	33			6	
28	NW	30·41	30·14	50	39			—	
29	NW	30·31	30·14	51	43			9	4
3d mo. March 1	NW	30·36	30·31	52	45			4	
2	NW	30·35	30·35	51	42			6	
3	NW	30·43	30·34	48	30			5	
a. 4	E	30·46	30·43	54	35			7	
b. 5	E	30·46	30·46	46	30			11	
b. 6	NE	30·46	30·37	46	31			19	
7	NE	30·37	30·33	42	32			22	
8	NE	30·36	30·31	41	31			14	
c. 9	E	30·36	30·35	43	32			11	1
c. 10	E	30·42	30·36	40	30			17	
c. 11	NE	30·40	30·32	40	32			13	
12	NE	30·32	30·22	40	35			5	
e. 13	E	30·22	30·14	43	35			11	
d. 14	NE	30·14	30·02	42	34			13	
15	NE	30·02	30·00	45	32			13	
b. 16	NE	30·02	30·02	44	27			—	
d. 17	NE	30·02	30·00	37	28			—	
d. 18	NE	30·00	29·79	35	29			—	
d. 19	SE	29·79	29·55	42	32			36	7
f. 20	E	29·55	29·70	45	37			0	7
f. 21	NE	29·90	29·70	41	36			6	
22	NE	29·96	29·90	43	28			13	
b. 23	NE	29·93	29·93	41	31			15	
g. 24	E	29·95	29·91	39	18			—	6
25	NE	29·95	29·92	43	23			12	
		30·61	29·55	52	18			2·77	0·25

NOTES.—*a.* Very misty a. m. with hoar frost. Wind W.
b. Hoar frost.
c. Lunar halo.
d. Snow in small quantities.
e. A little rain a. m. At 2 p. m. a slight shower of hail.
f. Misty a. m.
g. A smart shower of snow, covering the ground in a few minutes.

RESULTS.

Prevailing Winds Easterly.

Mean height of barometer . .	30·16 in.
Temperature	38·11°
Evaporation	2·77 in.
Rain and snow	0·25 in.

The atmosphere during this period has preserved, with remarkable uniformity, the character peculiar to the season—dry, dense, and clear below, though mostly cloudy above. From the rules laid down by Kirwan, the probability seems to be as five to one in favour of a dry summer. Rain noted by day 0·04, by night 0·08 in.

The rules above alluded to are stated to have been deduced from a series of observations made from 1677 to 1789, and are as follow:

1. When there has been *no storm* before or after the vernal equinox, the ensuing summer is generally *dry*, at least five times in six.

2. When a storm happens from an easterly point on the 19th, 20th, or 21st of March, the succeeding summer is *dry*, four times in five.

3. When a storm arises on the 25th, 26th, or 27th of March, and not before, in any point, the succeeding summer is generally *dry*, four times in five.

4. If there should be a storm at SW, or WSW, on the 19th, 20th, or 22nd of March, the succeeding summer is generally *wet*, five times in six.

"*Dry* summers (this philosopher states) are the consequence of *uniform* winds, from whatever quarter they may blow; as *wet* summers are of their *variation*, particularly if in opposite directions." Again, "Southerly winds are most frequently accompanied with rain in most parts of Europe at least, and probably in most parts of our hemisphere; but northerly and easterly, with clear, dry, and serene weather." And it seems reasonable to suppose that the wind which is to prevail during the summer, may most frequently set in with the vernal equinox.

TABLE XVIII.

1808.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
a. 3d mo. March	26	NE	30·05	29·95	47°	34°			6	
New M.	27	NE	30·06	30·05	38	32			—	
	28	NE	30·14	30·06	40	27			—	
	29	NE	30·12	30·05	45	28			—	
	30	NE	30·05	29·98	39	32			—	
	31	N	29·98	29·78	41	25			64	
4th mo. April	1	NW	29·84	29·67	41	22			—	
	2	NW	29·91	29·84	42	27			—	
b.	3	SW	29·91	29·72	51	37			34	
c.	4	SW	29·72	29·37	53	44			13	6
c.	5	SW	29·58	29·26	53	48			—	—
c.	6	SW	29·79	29·58	54	50			27	7
c.	7	SW	29·80	29·63	56	38			8	1
d.	8	NW	30·24	29·80	52	33			9	6
	9	NW	30·24	30·24	51	38			9	
c.	10	N	30·24	30·24	55	45			10	
c.	11	W	30·24	30·05	54	42			12	—
c.	12	NW	30·05	30·29	51	36			8	2
e.	13	NW	30·29	30·19	60	39			—	
e.	14	W	30·19	30·05	66	39			30	
	15	N	30·06	30·00	63	31			17	
f.	16	Var.	30·13	30·06	52	30			12	
	17	Var.	30·11	30·04	49	29			12	1
g.	18	Var.	30·04	29·61	46	32			11	
c. h.	19	Var.	29·62	29·57	46	25			17	2
c.	20	SW	29·57	29·14	49	36			—	59
	21	SW	29·44	29·09	47	34			20	
c.	22	W	29·41	29·40	54	36			14	7
	23	Var.	29·58	29·41	48	35			5	11
	24	N	29·87	29·58	47	33			8	7
			30·24	29·09	66	22			3·46	1·09

NOTES.—*a.* Snow.

b. The atmosphere, which has been long serene, begins to grow turbid.

c. Windy, sometimes amounting to a gale.

d. A shower at sunset, with *negative* electricity.

e. Misty morning.

f. The swallows made their first appearance this morning.

a. m. a strong *positive* electricity in the clear atmosphere.

Much snow, p. m. which gave *positive* signs till nearly over, and *ative*. The rain from the 17th to the end was always found electrified variably, often so as to afford moderate sparks. All the showers were mixed with hail. On the 23d, p. m. after a sudden jet of fire from the insulated to the uninsulated part of the conductor, there followed thunder pretty far to the east and south-east. The cuckoo had been heard this morning.

Additional Notes, &c.—Fourth Mo. 15. *Cirrostratus* in large patches, which came down towards the evening with an appearance as for thunder, the air being somewhat electric. 19. The flakes of snow this afternoon were unusually large. 20. Heavy rain in the evening.

RESULTS.

Wind and Character Variable. Hoar Frost has been frequent.

Mean height of barometer . . .	29·86 in.
Temperature	41·82°
Evaporation (in 29 days)	3·40 in.
Rain &c.	1·09 in.

Rain noted as fallen by day 0·20, by night 0·72 in.

TABLE XIX.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N. M. a. 4 mo. April 25	NW	29·91	29·87	43°	33°			5	6
26	N	29·91	29·90	47	34			8	41
27	N	29·90	29·87	42	36			6	
28	N	29·90	29·87	46	35			9	
29	W	29·90	29·88	45	32			10	
30	Var.	29·95	29·90	52	39			8	
5. 5 mo. May 1	Var.	29·93	29·91	65	38			13	
a. 2	E	29·91	29·81	66	50			32	
3	E	29·81	29·77	79	45			28	
b. 4	NE	29·80	29·77	80	44			30	
a. b. 5	Var.	29·77	29·75	72	53			37	
c. a. d. 6	S	29·75	29·59	78	52			21	
d. 7	SE	29·59	29·52	75	51			24	3
b. 8	Var.	29·54	29·52	63	45			11	7
9	SW	29·77	29·52	57	44			10	12
10	SW	29·90	29·71	62	48			16	2
11	SW	30·13	29·90	64	46			12	3
a. 12	SW	30·24	30·13	64	53			12	
e. 13	SW	30·24	30·15	73	55			18	
14	W	30·15	30·11	78	54			21	
15	S	30·11	29·95	83	60			33	
16	SW	30·01	29·95	79	55			33	
17	Var.	30·04	29·98	80	51			22	
18	NE	30·21	30·04	61	37			—	
19	NE	30·21	30·02	63	38			24	
20	Var.	30·02	29·77	66	52			—	—
21	N	29·97	29·58	66	50			27	40
22	SW	29·62	29·54	69	51			10	30
23	SW	29·80	29·62	66	46			10	11
		30·24	29·52	83	32			4·90	1·55

NOTES.—a. The nightingale sings.

b. Vaporous electricity pretty strong the whole day.

c. Lightning about sunset.

d. Much dew.

e. Lunar halo.

f. The evening twilight at nine was brilliant in the highest degree, [illegible] shadow into the light of the moon, though the latter [illegible] time.

[illegible] with little appearance of cloud. About 5 p. m. [illegible] with lightning to the west, and the bow again twice. Sparks of *negative* electricity from the extremity of one shower After this, from 8 to 10 p. m. wind SE. A thunder storm passed in the E from S to N. Three distinct *Nimbi* were perceptible on the horizon, illuminated by continual discharges, the sound of which did not reach us: (nor did their electricity in the least affect the insulated conductor.—*From MS. Reg.)*

h. At 8 a. m. a steady rain, non-electric: then showers, with a changeable electricity. The master of a small vessel, whom I met with on the 9th, informed me that, being in the Channel, about 90 miles E of my residence, he had the above storm for several hours as far to the *west* of him. He also was nearly out of hearing of the thunder, but had a dry squall at 9 p. m. so violent as to oblige him to strike all his canvas. This storm, therefore, though it extended far to the north, passed us in a column not exceeding thirty or forty miles in width, following the coast and the hills.

i. Squalls with rain: a fine bow p. m.

k. Hazy atmosphere, with abundance of *Cirrostratus.*

Additional Notes, &c.—Fifth Mo. 1. The pith-balls of the insulated conductor diverged one-eighth of an inch all day: there were few clouds, chiefly nascent *Cumuli.* [On this day *a new volcano* broke out in the midst of fertile pastures, three leagues SE of Vellas, in the Island of St. George, Azores. It burned during this month and for some time after, with the usual accompaniments of ejected cinders, large stones, and lava, which nearly ruined the island.—ATHENÆUM.] 2. A smart breeze and clear sky till afternoon, when a very few drops fell. 5. The wind veered from E by S. 8. The last shower gave sparks *negative,* the charge continuing for some time after it; at length, after a sudden *positive* charge, the air began to clear. 11. One of these *Nimbi* gave, during its approach, first a weak *positive,* then a strong *negative* charge: the rain, when it came, was first weakly *positive,* then non-electric; the weight of it fell to the NE of us. 14. a. m. *Cirrocumulus.*

RESULTS.

Winds Variable.

Mean height of barometer . . .	29·87 in.
Temperature	55·18°
Evaporation	4·90 in.
Rain, &c.	1·55 in.

The current month has been highly favourable to vegetation, which had been long retarded by the low temperature. Rain noted by day 0·52, by night 0·07 in.

TABLE XX.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
5th mo. May 24	*SW*	29·90	29·80	66°	49°			—	
New M. 25	*N*	29·88	29·70	77	56			—	
26	*E*	29·70	29·65	65	52			—	—
a. 27	SW	29·94	29·70	63	47			38	20
28	SW	30·15	29·94	68	44	66	46	16	
b. 29	SW	30·17	30·15	68	49	70	48	9	
30	SW	30·15	29·97	76	52	77	50	16	12
31	Var.	29·97	29·78	82	50	87	54	16	
6th mo. June 1	SW	29·99	29·79	63	44	63	44	8	3
2	SW	29·98	29·88	70	47	70	48	20	
3	Var.	29·88	29·68	65	47	72	53	—	3
4	Var.	29·68	29·65	71	49			33	
5	Var.	29·68	29·65	66	44	69	48	15	
6	W	29·80	29·68	58	46			—	
7	W	29·82	29·77	68	48	64	48	17	
8	W	29·77	29·65	65	51	63	50	16	2
9	*SW*	29·80	29·64	58	48			—	—
10	NW	30·01	29·80	63	47	61	46	15	4
c. 11	N	30·15	30·00	72	47	69	47	14	24
d. 12	Var.	30·15	30·11	70	45			8	
d. 13	SW	30·12	30·02	70	49	69	51	11	
14	*SW*	30·02	29·85	70	54	73	52	19	2
15	NW	30·07	29·85	65	44	63	45	12	
e. 16	NW	30·10	30·07	65	54	63	54	12	
17	W	30·07	30·00	66	58			16	
18	W	30·04	30·00	76	54	78	57	10	
19	NW	30·04	30·00	76	54	75	56	11	
20	Var.	30·00	29·95	72	56			14	
21	E	29·95	29·78	71	56	75	56	14	
22	SW	29·78	29·69	68	54	75	54	13	39
f. 23	Var.	29·83	29·70	68	44	74	43	17	
		30·17	29·64	82	44	87	43	3·90	1.09

NOTES.—*a.* Windy.

b. Much dew.

c. p. m. thunder in the NW.

d. Hazy atmosphere a. m.

e. No dew this morning.

f. The cuckoo has not yet left us: the nightingale is still heard, less constantly. An extensive *Stratus* on the meadows this evening.

ional *Notes*, *&c.*—The *Cirrostratus* in parallel waved bars made its ap-
n the 26th of Fifth month: which day in other respects (a somewhat

low barometer excepted) indicated nothing against fair weather: on the 10th of Sixth month the same prognostic was observed, with the barometer several tenths higher. In each case rain followed in some quantity. The rain on the 22nd was preceded by a regular gradation of clouds, during twenty-four hours, from the *Cirrus* to a completely full sky; and it was followed by the *Stratus*. 23 a. m. *Cumulus* with *Cirrus*; the lower air remarkably clear.

Of the rain in this period 0·12 in. is noted as having fallen by night.

RESULTS.

Prevailing Winds Westerly.

Mean height of barometer . . .	29·89 in.
Thermometer	59·41°
Evaporation	3·90 in.
Rain, &c.	1·09 in.

This spring, though very late in its commencement, is remarkable for having proceeded through a period of more than seven weeks without a single frosty night, at a season when they are almost always experienced. Fruit of almost every kind has consequently succeeded well; apples in particular, which seldom amount to a crop in these parts, promise to be abundant.

TABLE XXI.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
NewM. 6th mo. June 24	Var.	29·98	29·83	74°	48°	77°	47°	15	
25	NE	30·03	29·98	75	47	74	45	11	6
26	E	30·04	30·03	75	54	82	55	17	
27	N	30·08	30·04	67	52	68	52	—	
28	NE	30·13	30·05	61	52			23	
29	NE	30·24	30·11	75	50	79	52	20	
30	NE	30·24	30·15	70	49	76	50	18	
7th mo. July 1	NE	30·15	30·05	70	48	77	47	20	
2	N	30·05	29·99	68	52	68	51	17	
3	NE	29·99	29·97	69	44	70	43	12	17
a. 4	N	29·97	29·88	70	47	69	45	19	
b. 5	NW	30.08	29·95	66	47	67	49	15	
6	W	30.12	30·08	67	56	68	57	—	
7	W	30·08	30·01	75	52	74	54	33	
b. 8	SW	30·01	29·95	75	59			24	—
c. 9	NE	30·01	29·97	73	57	76	58	9	—
10	SW	30·13	30·01	76	58	79	59	—	
d. 11	SW	30.12	30·08	83	59	86	60	38	—
e. 12	S	30.08	29·96	92	63	94	60	30	
f. 13	S	29·96	29·93	96	60	98	62	35	
g. 14	Var.	29·96	29·92	94	63			31	
h. 15	NE	29·92	29·91	81	62	87	62	27	—
i. 16	Var.	29·97	29·91	88	59	85	61	20	—
k. 17	NW	30.03	29·97	83	57	84	59	16	
l. 18	E	29·97	29·90	86	54			25	
l. 19	SW	29·90	29·75	86	59			25	
m. 20	SW	29·78	29·70	75	55			17	—
21	SW	29·71	29·70	78	56			21	
22	S	29·76	29·71	79	59			16	02
		30·24	29·70	96	44			5·54	0·25

NOTES.—*a.* Misty, a. m.

b. b. Rather windy; a slight shower the 8th at night.

c. A little rain from the N a. m. and at sunset cloudy, with temperature 67°.

d. a. m. A few drops of rain, and much dew at night.

e. A very fine day. The *Cirrus* cloud only appeared. Temperature at 10½ a. m. 86°: the maximum 92° was about 2 p. m. with a fine breeze, so that the heat was not oppressive. Evaporation from a vessel on the ground between 1 and 2 p. m. 0·04 in.; between 4 and 8 p. m.

about the same quantity; in two hours after sunset there evaporated no sensible quantity of water, and dew fell. About 11½ p.m. a bright small meteor passed from SW descending to W.

f. Dew on the grass. Temperature at 9 a.m. 84°. The intense heat of the *maximum* lasted nearly three hours, till about 4 p.m. At 6 p.m. temperature 90°; after which it declined rapidly. The thermometer is defended from the sun by a thick laurel tree, and subject to no other reflection than that of the grass-plot round it. That at the laboratory rose (out of reach of the sun's rays) to 98·5°; but it is contiguous to a large building, and might be affected by a current of heated air from the roof or walls. Another at Plashet, a mile and a half eastward, indicated 96° as the *maximum* under the shade of a house. Evaporation *in the shade* from 9 to 2, 0·1 in.; from 2 to 7, 0·19 in. The sky was clear till near sunset; then appeared some haze, indicating the fall of dew, in the SE, and a few traces of thunder clouds in the NW. The *vapour point* about 2 p.m. was 65°.

g. At 2½ a.m. several birds were singing by moonlight; the lark on wing and the chimney-swallow were distinguished. The cuckoo is said also to have been then heard. Sudden strong gusts of wind occurred between 6 and 7 a.m., and 2 and 3 p.m. Some lightning in the W at night.

h. Dew on the grass: a fine breeze from ENE a m. Much lightning in the W this night: a few drops of rain p.m.

i. No dew: at sunset a smart breeze from SW, with lightning in the NE, and a few drops of rain.

k. Dew; little wind; evening twilight very brilliant, and the clouds highly coloured.

l. Dew.

m. A fine breeze from SSW.

Additional Notes, &c.—Sixth Mo. 29. *Cirri* p.m. pointing downward and to NE: at sunset a beautiful rose-coloured haze on the W horizon.

Seventh Mo. 2. At sunset a low group of *Cirrostratus* in the NW. 4. *Cumulostratus* p. m. and much *Cirrostratus* at sunset. 15. The evaporation in a sheltered spot near the ground was only 0.11, and on the 16th only 0·09 in.

Rain by day 0·06, by night 0·17 in.

RESULTS.

Prevailing Winds Northerly.

Mean elevation of barometer	29·97 in.
Temperature	65·60°
Evaporation	5·54 in.
Rain, &c.	0·25 in.

There has been very little indication of electricity by the rod; a few thunder clouds have appeared at intervals, which at no time threatened a discharge. The lightning we have perceived belonged to storms too distant for the clouds composing them to be visible above our horizon.

Thermometer at Paris, (reduced to Fahrenheit's Scale) with the Wind and State of the Sky.

1808.		Max.	Min.	Wind.	
7th Mo. July	10	82·6	55·1	NW	Cloudy.
	11	86·5	59·5	E	Very fine; hazy at noon.
	12	90·2	65·7	SE	Fine, with light clouds.
	13	93·8	61·0	SE	Very fine day.
	14	95·0	66·8	S	The same: hazy at noon.
	15	97·2	70·0	SE	The same.
	16	89·3	68·7	NW	Thick haze and clouds.
	17	81·5	62·7	W	Cloudy.
	18	93·8	74·0	Var.	Much cloud.
	19	95·5	66·3	NE & SW	Cloudy: rain in the evening.
	20	79·6	64·4	W	Cloudy, with rain.
	21	76·1	61·7	S	The same.
	22	79·6	61·2	SW & SE	Cloudy: fine at intervals.

To the Editor of the Athenæum.—Sir, your correspondent L. H. takes notice that, on the 14th of July last, at half-past two in the morning, several birds were heard singing, and the lark and the chimney-swallow were observed upon the wing. Give me leave, therefore, to inform him, through the channel of your useful and entertaining miscellany, that on the 12th of the same month, at a quarter before three a. m. I heard the song thrush, *turdus musicus*, as well as the blackbird, *turdus merula*, at Hackney, in Middlesex. I remain, Sir, yours, &c.—S. R.

Gloucestershire.—On the night of Friday, the 15th July, after several days of uncommon and oppressive heat, the city of Gloucester experienced a storm of thunder and lightning, which extended many miles round, and exceeded in awful phenomena any one remembered for many years past. Unlike the tempest of the milder zones, the thunder was remarked to roll in one continued roar, for upwards of an hour and a half, during which time and long afterwards, the flashes of lightning followed each other in rapid and uninterrupted succession. But the most tremendous circumstance of this storm was the destructive *hail shower* which accompanied its progress. It may be doubted, however, whether such a name be applicable; for the masses of ice which fell on the places where the tempest most fiercely raged, bore no resemblance to hailstones in magnitude or formation, most of them being of a very irregular shape, broad, flat, and ragged, and many measuring from three to nine inches in circumference. They appeared like fragments of a vast plate of ice, broken into small masses in its descent towards the earth.—The storm rose in the south-west, and spreading to the north-west, gradually died away in the north-east, from which quarter it was opposed for nearly its whole duration by a strong breeze, particularly hollow and mournful in its sound. The damage done in different parts of this and other counties is very considerable. A fire ball burst in the College Green, carrying away one of the pinnacles on the west end of the cathedral, two cows were killed in a field at Sneedham Green, ten couple of ducks in the fold yard of a gentleman near Cheltenham, and twelve at Upton, near this city. A summer-house on an eminence, belonging to Edward Sheppard, Esq. of Uley, was entirely burnt. At Tewkesbury, many windows that lay in the direction of the storm have been broken, as well as the glass of the hot-houses, &c. in the gardens. At Tetbury, and in its neighbourhood, some houses were set on fire, and many panes of glass broken. Upwards of six hundred panes were broken in the house and garden of Mr. Cave. At Frenchhay, near Bristol, the orchards are stripped of their fruit, and the gardens of their plants. The greatest part of the windows on the south side of the broadway are broken, and the tops of the beans in the same neighbourhood have been cut off. The row of trees before Mr. Tucker's house at Moor-end, was so broken, that the leaves and small branches lay in the road a foot deep. At Newton, Corston, and Kelston, most of the windows that lay in the direction of the storm have been broken. The plantations and shrubberies of Mr. Langton, of Newton, were covered with leaves and branches of trees, and the pines, and other fruit in his hot-houses entirely destroyed. In the south and west fronts of Mr. Jollyfe's mansion at Amerdown, not a pane escaped, and the ground was even the next morning covered with the ice that fell. At Radstock, several fields of corn are nearly destroyed, the stalks being mostly cut off in the middle by the masses of ice. At Writhlington, near Radstock, very great damage has also been done to the growing crops. A boy belonging to Mr. Harding, of Keysham, was struck down by the lightning, and his recovery was for some time doubtful: a sheep which was near him was killed. All the glass in the gardens, and a great part in the house of Mills Park, were destroyed, and a great number of pine-apples, grapes, fruit trees, &c. were cut to pieces. A valuable horse belonging to Mr. Hyatt, of Shepton Mallett, was struck dead in the field. William Simkins, jun., mowing with two other men at Kilmarton, Wilts, was killed by the lightning, which also struck down his companions, but they recovered after a short time. In many parishes near Monmouth, roofs of houses, barns, and sky-lights were destroyed by the hail, boughs of trees were cut asunder, and the apples and pears scattered in such quantities that they might have been raked together in heaps. In the park of the Earl of Digby, near Sherborne, the limbs of a large oak tree were shivered in pieces, while the middle or heart was left standing; two sheep were killed under another tree. A flash of lightning struck the back part of a house in the lower town of Bridgenorth; carrying down a large proportion of the chimney, it descended into a bed-room over the kitchen, demolished the windows, and three doors in the room, and forced down the whole front of a large closet, splintering the wood in all directions; three children in bed escaped unhurt. The storm appeared to have spent its fury between Piper's Inn and Ashcot. Here, as well as at Glastonbury, the corn was laid flat, the roads inundated, the apple trees stripped not only of their fruit, but their very leaves, and almost every pane of glass in the village of Ashcot was broken.—(ATHENÆUM.) A large tree in Dunham park was struck by the lightning, and its trunk to the height of near three yards shivered. It is laid open (says the account) like the loose staves of a barrel, and the bark not only stripped clean off, but scattered all around to a great distance, as are numerous splinters, one of the latter having actually perforated another tree. *The top and branches are thrown upon the ground, and but little injured.*

TABLE XXII.

1808.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
New M. 7th mo. July	23	SE	29·76	29·74	85°	59°			19	01
	24	S	29·74	29·70	80	59			10	19
	25	NW	29·75	29·71	70	58			5	33
	26	NE	29·76	29·75	72	56			10	06
	27	E	29·75	29·44	75	58			10	1·88
	28	W	29·59	29·43	67	60			14	29
	29	SW	29·68	29·59	78	60			10	
	30	SW	29·75	29·68	76	55			14	—
	31	E	29·68	29·57	80	61			9	42
8th mo. Aug.	1	SW	29·74	29·52	72	57			11	14
	2	NW	30·06	29·74	73	56			18	
	3	W	30·06	30·04	65	54			8	
	4	SW	30·04	29·84	80	50			19	
	5	SW	29·84	29·70	80	61			17	
	6	SW	29·78	29·70	77	59			19	—
	7	SW	29·79	29·76	75	59			9	89
	8	SW	29·79	29·56	75	59			16	04
	9	NE	29·69	29·54	72	56			7	75
	10	NW	29·69	29·67	70	59			11	
	11	W	29·73	29·66	74	50			9	
	12	SW	29·73	29·69	78	61			15	01
	13	SW	29·69	29·64	70	60			7	09
	14	SW	29·64	29·60	72	57			15	—
	15	W	29·80	29·64	71	53			16	—
	16	W	29·85	29·76	71	58			17	—
	17	NW	30·00	29·85	68	54			9	
	18	W	30·08	30·00	71	54			12	
	19	NW	30·14	30·08	71	48			7	
	20	Var.	30·16	30·14	76	53			10	
			30·16	29·43	85	48			3·53	5·10

[illegible] Register.—Seventh Mo. 24. A shower about 1 p. m. fol- [illegible] some appearances for thunder in the evening. 25. Morn- [illegible] a thunder storm, which lasted till three after which the [illegible] lightning was not very vivid, but followed almost in- [illegible] 26. A very showery day. 27 Heavy rain commenced [illegible] and continued all night. 28. Very stormy, with almost [illegible] evening cleared up. 30. Very fine day. 31. A thunder [illegible] 4 p. m. lasting till nine, with continued but not heavy [illegible] at last it lightened only.

[illegible] at intervals. 2. Fair: a fine breeze in the [illegible] beautiful in the evening. 7. A very large lunar halo about 10 p. m. 8. A heavy storm of wind and rain from 4 to half-past 7 a. m. in which time 0.89 in. of rain fell. 9. A thunder storm p. m. with rain of an hour and a half's continuance. 20. A *Stratus* in the marshes at night.

RESULTS.

Prevailing Winds Westerly.

Mean height of barometer	29·76 in.
Thermometer	65·30°
Evaporation	3·53 in.
Rain, &c.	5·10 in.

The amount of rain is greater by 1·88 in. than that found in the rain gauge at Plaistow. It was obtained in my absence from home by a temporary gauge fixed near the River Lea, at the laboratory, and *less elevated* by about 30 feet than the gauge at Plaistow.

Seventh mo. 1808.—Being on a journey, I made some observations which seem to prove that *showers* are at times determined in their extent *by the nature of the soil and surface.* At London, on the evening of the 20th, we had a small rain without thunder, notwithstanding the previous excessive heats. The roads were moist on the 21st, when we set out, the soil being *loam.* Between Barnet and St. Albans, *on the chalk,* they were dusty, with only the marks of large drops on them. Some miles beyond the latter place, we found the road, *on sandy loam,* watered by a shower going before us. The further boundary of this shower was about Dunstable. On the *calcareous downs,* leaving Dunstable, no rain appeared to have fallen, the dust flying freely; but at the foot of the hill, where the new road is cut, we found the soil *(a sandy loam)* again well watered, precisely to the boundary between it and the chalk. Arriving at Woburn, we learned that showers had fallen there, *on the sand,* in the course of the afternoon, attended with hail. Thus the rain of the day had been clearly determined to the *sand* and *clay,* leaving the *chalk* dry.

As we advanced northward, we got at length among thunder showers. On the evening of the 24th of Seventh month, passing Sherwood Forest, the beauty of several groups of thunder clouds, tinged by the rays of the setting sun, exceeded almost every thing I had seen of the kind. We found that heavy rain had fallen at this time at Bawtry, Doncaster, and other places north of us; and on the day of the date of this note, we had a steady rain for several hours in the neighbourhood of Pontefract. The reader may compare these observations with the rain, &c. entered in the table and notes, as having happened at home.—*MS. Notes.*

TABLE XXIII.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
NewM. 8th mo. Aug. 21	NW	30·15	30·11	73°	51°			7	
22	NE	30·14	30·11	76	53			7	—
23	NE	30·11	30·07	72	53			12	1
24	NE	30·09	30·07	68	54			11	
25	NE	30·07	29·83	72	50			10	
a. 26	SW	29·83	29·55	74	49			18	14
b. 27	NW	29·66	29·55	75	55			10	
28	W	29·85	29·66	66	47			14	
29	S	29·85	29·72	68	43			14	
30	SE	29·72	29·58	73	59			13	6
c. 31	SW	29·58	29·50	70	58			14	11
d. 9th mo. Sept. 1	SW	29·71	29·54	68	54	67°	54°	18	10
2	SW	29·79	29·71	67	55	67	54	13	18
3	W	29·79	29·76	67	56	66	56	10	3
4	W	29·78	29·76	66	48			9	—
c. 5	S	29·76	29·62	67	54	66	54	11	6
6	SW	29·72	29·66	68	52	65	52	11	5
c. 7	SW	29·66	29·57	67	57	67	56	15	2
8	SW	29·57	29·30	65	50	69	51	19	4
9	S	29·30	29·28	64	54	68	54	7	47
e. 10	SE	29·40	29·30	63	52	68	53	5	12
11	W	29·58	29·40	62	52	61	52	3	48
f. 12	SE	29·62	29·58	62	52	64	48	2	41
13	Var.	29·71	29·62	67	53			6	20
g. 14	N	29·97	29·71	68	54			5	
g. 15	NE	30·23	29·97	71	54			17	
g. 16	NE	30·23	30·21	67	44			25	
g. 17	E	30·21	29·96	66	54			16	
18	Var.	29·96	29·88	68	57			16	10
g. 19	SW	29·73	29·86	67	50			10	
		30·23	29·28	76	43			3·48	2·58

NOTES.—*a.* Misty morning.

b. A heavy shower between 7 and 8 a. m.

c. Much wind by night.

d. Squalls with rain.

e. Very wet a. m.; fair p. m. but distant thunder about five.

Lightning in the W after 10 p. m.

air days, with misty mornings, and abundance of dew.

RESULTS.

Winds Variable.

Mean height of barometer	29·76 in.
Thermometer	60·34°
Evaporation	3·48 in.
Rain	2·58 in.

Of which there was noted by day 0·78 in. by night 0·42 in.

Character of this period wet and changeable.

1808. Ninth Mo. 10th. Travelling about noon this day, on the road to Hornchurch, while a gentle shower was falling, I was surprised with the appearance of a pretty dense *mist*, which seemed to pour along the road towards us, at the rate of eight or ten miles an hour; moving close to the ground, with a well defined boundary across the road. On meeting, we found it accompanied by *very heavy rain*, which passed over, occupying apparently but a few yards of the road, and presenting the appearance of mist again, as it left us; while the gentle rain continued as before. There were large dark *Nimbi* and *Cumulostrati* overhead.—*From MS. Notes.*

The *Manchester Register* presents the following points of comparison during this period. Eighth month, 22, 23, 24, Wind there, NE; with us SE: barometer steady with both. 25, 26, Both barometers descend, with a change to SW, followed by rain. 29, Wind S, with us; there, strong at W. 30, SE, with us; SW and W, strong at Manchester. 31, at night, this strong current appears to have reached us. Ninth month, 3 to 8, Winds with us, W, S, and SW, and 0·2 of rain; with them, the same winds, but mixed with SE, and 0·87 of rain. 9 to 13, With them, wind E and NE, and 0·27 of rain; with us, the winds variable and mixed with SE, and 1·68 of rain. 14 to 17, With us, NE, N, and E, and fair: the same with them, except a mixture of SE, (now dry, having probably left its water with us.) 18, Variable winds at each station, with about the same small quantity of rain. 19, Fair, with a westerly wind, at both stations.

Scotland.—The beautiful wooded bank, immediately opposite to Springfield paper-mill, lately gave way with a dreadful crash into the river Esk, which runs at the bottom, and so completely choked it up, that not a drop of water passed for several hours. The bank, which is about two hundred feet in height, had discovered symptoms of agitation on the preceding day, and, for about an hour before it gave way, the agitation was extremely violent, and the trees were seen falling in all directions; but, when it began to move in a body, it was awfully grand and terrific, and the noise was equal to the loudest thunder. The slip is supposed to have been occasioned by water lodged in the bank, which had loosened it from the bed.—(ATHENÆUM.)

TABLE XXIV.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
b. a. 9th mo. Sept. 20	W	30·29	30·20	68°	44°			9	—
b. a. 21	W	30·20	30·12	68	45			5	1
b. a. 22	Var.	30·12	29·60	67	51			—	23
23	N	29·90	29·60	59	43	66°	41°	18	1
24	NW	30·03	29·90	56	46	54	44	9	
25	Var.	30·04	29·90	60	41	61	41	5	
b. a. 26	Var.	29·90	29·90	64	47	62	44	8	
27	*NW*	29·90	29·77	55	36			9	
c. 28	*SW*	29·77	29·47	56	36	54	36	5	
29	*N*	29·49	29·47	58	38	50	34	4	
30	*NW*	29·77	29·49	51	34	52	36	5	
10th mo. Oct. 1	*NW*	29·77	29·70	54	38	51	36	7	
2	*SE*	29·80	29·70	54	34	57	47	3	
b. 3	*W*	30·04	29·80	55	46	54	38	4	
b. 4	*SW*	30·05	30.04	56	41	56	42	2	
h. 5	*S*	30·05	29·90	62	46	62	38	4	40
d. 6	SW	30·03	30·00	65	48	61	44	7	
e. 7	W	30·00	29·31	57	46	58	45	12	19
f. 8	NW	29·70	29·31	52	41	51	40	14	1
9	NW	29·77	29·71	53	38	52	40	9	
a. 10	W	30·01	29·77	57	37	56	37	6	
a. 11	W	29·92	29·80	56	41	57	41	7	6
a. 12	NW	30.06	29·92	54	34	52	34	9	
13	NW	30·06	29·50	50	40	48	37	8	6
g. 14	SW	29·50	29·18	57	38	55	38	12	4
f. 15	W	29·52	29·18	48	42	48	41	4	3
f. 16	W	29·53	29·48	51	40	49	39	10	7
f. 17	NW	29·73	29·53	49	38	47	37	7	
f. 18	SW	29·73	29·50	54	38	51	38	11	3
		30·29	29·18	68	34			2·13	1·14

NOTES.—*a.* Much dew a.m.: the product in the gauge on the 21st was *dew*.

b. Misty.

c. Lunar halo at night.

d. A *Stratus* on the marshes.

e. A stormy night.

f. Windy.

g. a. m. stormy with rain. Wind south.

h. This is the product of rain fallen at different intervals (not noted) since the 26th.

Additional Notes, &c.—Tenth Mo. 3, 4. A *Stratus* at night. 13. A fine day; cloudy after sunset; the depression of the barometer was chiefly by night.

Greenock, Oct. 8.—It blew a heavy gale from SW all yesterday, but about midnight it suddenly chopped round to the NW, and has since continued to blow almost a hurricane.—(Pub. Ledger.)

Chester, Oct.—The tremendous storm on the 8th instant has done considerable damage to the shipping in the Mersey.—(Papers.)

Manchester, Oct. 8.—Very boisterous, with a great fall of rain, *viz.* 0·78 in. Wind NW. This was a very rainy *month* here, the total being stated at 5·32 in. Mean of barometer 29·49 in.—*Hanson.*

The 8th of Tenth month appears to have been very wet at Paris, with the wind strong at W. Barometer about 29·5 in. English.

Fogs preceded this great flow to the eastward alike at Manchester, London, and Paris, and by nearly the same short interval at each station.

RESULTS.

Prevailing Winds Westerly.

Mean height of the barometer . .	29·78 in.
thermometer . .	48·84°
Evaporation	2·13 in.
Rain	1·14 in.

Of which by night 0·52 in. remainder by day and night.

TABLE XXV.

1808.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
N. M. 10th mo. Oct.	19	NW	29·68	29·50	49°	40°	48°	40°	8	
a.	20	NW	29·68	29·29	53	42	52	42	5	36
b.	21	W	29·55	29·48	54	38	52	39	10	
c.	22	W	29·79	29·55	51	34	48	33	8	
	23	SW	29·55	29·30	52	42	51	38	10	42
d. c. b.	24	SW	29·69	29·55	54	38	53	37	11	
e.	25	SW	29·69	29·15	54	46	53	43	11	14
b.	26	SW	29·40	29·15	56	42			13	
e. d.	27	SW	29·42	29·39	53	40	52	40	8	80
	28	SE	29·65	29·39	53	43	53	41	6	25
f.	29	S	30·05	29·65	54	40	60	38	3	21
	30	NE	30·33	30·05	54	43	53	42	3	
g.	31	NE	30·33	30·27	52	44	51	42	7	
b. 11th mo. Nov.	1	NE	30·27	30·15	51	47	50	41	14	
	2	NE	30·15	30·06	54	47	52	46	13	
	3	NE	30·30	30·15	48	42	48	41	—	
h.	4	NE	30·30	29·91	50	39	48	37	30	—
	5	Var.	29·92	29·88	47	25	45	24	—	
i. c.	6	E	29·88	29·72	45	36	44	29	7	
	7	E	29·72	29·66	47	41	46	38	4	
g. h.	8	NE	29·66	29·57	52	43	51	42	3	8
	9	NE	29·75	29·57	53	42	53	43	2	
k.	10	NE	29·84	29·72	54	42	52	44	—	
l.	11	NE	30·07	29·84	49	36	48	35	—	
	12	NE	30·13	30·10	46	37	45	37	31	
c.	13	NE	30·12	30·06	41	30	41	27	—	
	14	Var.	30·11	30·00	42	28	38	27	—	
c.	15	S	30·00	29·63	51	33	50	31	9	
e. b.	16	S	29·63	29·29	54	49	53	48	14	9
e.	17	S	29·29	28·81	56	44	55	46	7	12
			30·33	28·81	56	25	60	24	2·37	2·47

NOTES.—*a.* Very dark and cloudy a. m. the wind rising.

b. Windy.

c. Hoar frost.

d. Hail.

e. Stormy nights.

f. Swallows seen for the last time.

g. Misty, the trees dripping.

h. Showers in the evening.

i. Much rime on the trees a. m: the leaves fall abundantly; a large mulberry tree cast its whole foliage in an hour or two.

k. Much dew a. m.

l. No dew a. m. the sky being veiled with clouds. Some drizzling rain followed.

Additional Notes, &c.—Tenth Mo. 20. This (nocturnal) fall of the barometer was preceded by a sensible fluctuation: the tendency was first to rise. 27. *Nimbi*, well formed, at intervals through the day: at night, two small meteors almost at the same instant.

Eleventh Mo. 16. Numerous small fluctuations preceded this rapid fall of the barometer.

Deal, Oct. 24.—Last night and this morning it blew very hard from the SSW.

Torbay, Oct. 26.—We have had heavy gales from the SW for several days, accompanied with dreadful squalls and showers.—A similar account from Plymouth.

Cork.—A heavy gale on the night of Nov. 17, the wind SW, shifting to NW.—(Public Papers.)

Cotte.—Journ. de Physique, T. 65, p. 385, notes, under Oct. 26, an earthquake at Leghorn, and very stormy weather, with a low barometer at Montmorency.

RESULTS.

Winds Variable: the prevailing one NE, attended with dry weather. The South-west has been stormy and wet.

Mean height of barometer	29·76 in.
temperature	45·36°
Evaporation	2·37 in.
Rain	2·47 in

Of which by night 2·08 in.

TABLE XXVI.

[illegible]	[illegible]	Pressure.		Temp.		[illegible]		Evap.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9	36
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34	6	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44	[illegible]	44	4	2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	43	—	40
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44			9	
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible]	2	2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53	30	—	2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30	7	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34	3	46
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	37	8	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	37	6	16
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			12	
		[illegible]	[illegible]	[illegible]	[illegible]			9	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			3	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			4	—
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			11	3
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			9	
		[illegible]	[illegible]	[illegible]	[illegible]			—	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			7	
	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	1	
		[illegible]	[illegible]	[illegible]	[illegible]			1	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			2	
		[illegible]	[illegible]	[illegible]				0	
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			2	5
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	
		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]38	1·52

[illegible] weather. [illegible] The maximum of temp. [illegible]

[illegible] part of the country.

i. Misty air.

k. Some snow a. m.

l. A bright small meteor moving from S towards W, soon after 6 p. m.

Additional Notes, &c.—Twelfth Mo. 9. Ice on the water: probably rather from the effect of evaporation than the temperature of the air.

Plymouth, Nov. 18.—A heavy gale at WNW.—(Papers.)

As the fall of the barometer, terminating about this day, was a great and continued one, it may be proper to note, that *Cotte* (Journ. de Phys. *ubi antea*) places under this date a storm with high tides on the coast of Normandy, disastrous inundations in the department of La Lozere, &c. near the gulf of Lyons, and much wind with a low barometer at Montmorency.

December 8.—A violent storm in the Channel, and on the coast of Holland, But *little variation* in the barometer (though cloudy and windy) at Montmorency. *Cotte, (ubi supra.)*

He notes likewise the following singular circumstances of temperature in this month. On the 13th, thermometer at Altona,—14 Reaum. about *zero* of Fahrenheit, at Montmorency, 41° Fahrenheit; and on the 14th, 40° at Montmorency, while it was only 35° at Venice and Naples!

Lunar Rainbow.—The following notice of this rare phenomenon has been handed to me from my friend John Capper, of Stoke Newington. "On the 1st of 12th month (Dec.) 1808, a little after 5 o'clock a. m. I observed a lunar rainbow; the moon being near setting to the north of west. It was of unequal brightness. In the most northerly part of it, near the earth, the colours were very distinct, in the other parts they were scarcely distinguishable; and it had, on the whole, the appearance of a white arch, at the usual distance from which the second (or doubly reflected) bow was visible. Opposite the brightest parts, at the northern end, it was very strong, and coloured, as the inner bow in that place was. The white part did not last more than ten minutes; the coloured part continued visible much longer."

RESULTS.

Winds Westerly.

Mean height of barometer	29·86 in.
temperature	41·01°
Evaporation	1·38 in.
Rain	1·52 in.

Of which noted by night 0·63 in.

TABLE XXVII.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N.M. *a.b.* 12 mo. Dec. 17	N	29·65	29·45	38°	24°			—	—
c. 18	N	29·65	29·62	31	26			—	—
19	N	29·71	29·68	32	25	31°	23°	—	—
20	N	29·99	29·71	30	14	29	16	—	
d. 21	SW	29·99	29·20	34	20	34	19	—	—
22	Var.	29·42	29·20	33	27	32	26	—	—
e. 23	E	29·45	29·39	31	28	31	27	—	—
24	Var.	29·61	29·56	32	25	32	24	—	
f. 25	NW	29·55	29·50	30	21			—	—
g. 26	E	29·55	29·49	33	23			—	—
a. 27	E	29·60	29·55	36	34			34	14
a. 28	E	29·55	29·52	38	36			—	—
29	E	29·52	29·49	42	37			4	15
30	E	29·60	29·50	44	38			5	
h. 31	E	29·62	29·60	38	36			1	12
1809. 1st mo. Jan. 1	E	29·60	29·49	39	38	38	36	—	—
i. 2	NE	29·49	29·35	40	30			—	—
3	NE	29·65	29·49	30	28	31	27	—	—
k. 4	E	29·70	29·65	33	30			—	—
k. 5	SE	29·65	29·56	38	32			8	19
k. 6	SE	29·56	29·43	48	36	47	36	6	24
k. 7	SE	29·43	28·80	45	39			5	16
k. 8	S	29·37	28·50	46	37			4	23
l. 9	S	29·25	29·20	44	36			1	39
k. 10	NW	29·38	29·16	46	34			4	2
m. 11	W	29·49	29·38	47	36			1	
12	N	——	29·49	40	30	39	31	—	—
13	N	29·82	——	37	28			—	—
14		29·82	29·77	34	29	32	28	—	—
n. 15	NE	30·08	29·77	29	26	30	25	12	20?
		30·08	28·50	48	14			0·85	1·84

NOTES.—*a.* Misty.

b. About 2 p. m. a heavy squall from NW with rain, sleet, and snow, giving strong sparks from the rod: the night proved very stormy.

c. Clear; brisk wind; snow at intervals, and pretty much of it in the night. Wild geese migrate in large flocks.

d. Rime on the trees. *Minimum* of temperature at 9 a. m.

e. Snow at intervals for three days past, and much this night. In the day it fell very sparingly, and regularly crystallized in *stars*.

f. Small rain, freezing on the ground.

g. Clear morning; sleet in the night.

h. Cloudy for three days past.

i. Snowy morning after a wet evening.

k. Cloudy and windy weather. On the 6th a meteor of moderate size, passing eastward.

l. Hoar frost: *Cirrostratus:* a *Nimbus* in the S. These successive indications were followed by a steady rain.

m. A fine day. The whole level, bordering on the Lea from Stratfort upwards is now, by the continued rains and swelling of the river, several feet under water.

n. Snow at intervals. The inundation has subsided.

Additional Notes, &c.—Twelfth Mo. 17. This night is described in the Papers as very stormy, with the following differences in the wind: Torbay and Deal, NW. Yarmouth, NNE. Sheerness, NE. Ramsgate, (with much snow,) N.

17, 18, 19. A great snow in the Netherlands, and disasters by *avalanches* in Switzerland. *Cotte.*

Aberdeen, Dec. 31.—We have experienced a strong gale from ESE to SE, with squalls and rain, which prevented all intercourse by shipping, there not being a single arrival or sailing for eight days.—(PUB. LEDGER.)

Scotland, December.—A *whale* ran itself on shore on the banks of the Frith, between Alloa and Cambus: where it was with difficulty killed by the country people. Considerable damage occurred in several places by the high wind, heavy rain, and floods; and in one instance by lightning, which perforated a large building in several places, as if it had been battered by cannon shot.—(ATHENÆUM.)

Plymouth Dock, Jan. 7.—Last night it blew a tremendous hurricane, with heavy rain till daylight this morning, when the weather moderated.—PUB. LEDGER.)

RESULTS.

Prevailing Winds Easterly.

Mean height of barometer	29·52 in.
thermometer	33·68°
Evaporation	0·85 in.
Snow and rain	1·84 in.

Character cloudy and frosty, with frequent rain and snow. The barometer has departed little from the mean, save in one great *depression*, the crisis of which occurred about 2 p.m. the 8th; and though the subsequent elevation went on at the rate of more than 0·1 inch per hour, the wind was quite moderate. It is very rare to observe so steady a wind from the SE, as that which preceded this fall of the barometer.

Rain noted as by night 0·63 in.

TABLE XXVIII.

1808.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N. M. 1st mo. Jan. 16	E	30·12	30·07	30°	25°			—	
17	E	30·07	29·94	30	18	29°	19°	—	
18	E	29·87	29·77	28	19	26	19	—	
19	Var.	29·53	29·48	30	23	30	26	—	
20	N	29·50	29·43	33	31			—	—
21	Var.	29·54	29·14	35	31	33	30	—	—
22	Var.	29·65	29·08	35	19	30	21	—	—
23	Var.	29·73	29·44	33	27			—	—
24	W	29·45	29·40	45	34	45	32	15	1·89
25	SW	29·82	29·47	48	36			5	27
26	SW	——	29·18	51	40			—	
27	SW	29·55	——	52	46			18	
28	S	29·55	29·22	56	47			14	
29	W	29·36	28·93	53	43			15	1
30	W	29·75	28·70	51	37	49	37	12	23
31	S	29·94	29·76	50	37	46	36	4	
2d mo. Feb. 1	SW	29·76	29·52	54	48	53	46	14	
2	SW	29·52	29·20	51	49	51	48	—	—
3	SW	29·40	29·20	55	44	50	42	19	12
4	SW	29·45	29·37	51	41	49	40	7	7
5	SW	29·43	29·37	51	41	48	40	8	23
6	SW	29·93	29·30	51	38	49	37	10	12
7	E	30·00	29·90	39	33	38	31	10	—
8	E	29·90	29·40	44	33	41	32	5	25
9	SE	29·31	29·29	54	44	52	41	9	1
10	S	29·29	29·11	52	44	54	44	14	2
11	SW	28·85	28·75	51	42	52	41	11	7
12	SW	28·80	28·70	51	40	49	40	10	8
13	SW	29·20	28·80	53	43	51	42	14	1
		30·12	28·70	56	18			2·14	33·8

The period I am now reporting is so extraordinary in its character, that I must exchange the usual form of notes for a continued narration.

The wind has been inconstant, though the greatest quantity of air has undoubtedly flowed from the SW. The movements of the barometer have been, in like manner, desultory, and the *mean* much lower than for a considerable time past; there have been, moreover, some great and pretty sudden depressions. The te[illegible]ure, (after the thaw,) was very high for the season, and the evapo[illegible]pitation great.

[illegible] was very conspicuous on the 17th, the whole disk appearing [illegible] brilliant small meteor descended on the SE horizon about [illegible] the preceding day the snow exhibited its beautiful blue and pink shades at sunset, and there was a strong evaporation from its surface. I found a circular area, of five inches diameter, to lose one hundred and fifty grains troy, from sunset on the 15th to sunrise next morning, and about fifty grains more by the following sunset; the gauge being exposed to a smart breeze on the house top. The curious reader may hence compute for himself the enormous quantity raised in those twenty-four hours, without any visible liquefaction, from an acre of snow: the effects of the load thus given to the air were soon perceptible. On the 18th, though the moon was still conspicuous, the horns of the crescent were obtuse. On the 19th appeared the *Cirrus* cloud, followed by the *Cirrostratus*. In the afternoon a freezing shower from the eastward glazed the windows, encrusted the walls, and encased the trees, the garments of passengers, and (it is said) the very plumage of the birds with ice.* Its composition, which I examined on a sheet of paper, was no less curious than these effects. It consisted of hollow spherules of ice, filled with water; of transparent globules of hail; and of drops of water at the point of freezing, which became solid on touching the bodies they fell on. The thermometer exposed from the window indicated 30·5°. This shower was followed by a moderate fall of snow. From this time to the 24th we had variable winds and frequent falls of snow, which came down on the 22d in flakes as large as dollars, with sleet at intervals. On the 24th a steady rain from W decided for a thaw. This and the following night proved stormy: the melted snow and rain, making about two inches depth of water on the level, descended suddenly by the rivers, and the country was inundated to a greater extent than in the year 1795. The River Lea continued rising the whole of the 26th, remained stationary during the 27th, and returned into its bed in the course of the two following days. The various channels by which it intersects this part of the country were united in one current, above a mile in width, which flowed with great impetuosity, and did much damage. From breaches in the banks and mounds, the different *levels*, as they are termed, of embanked pasture land, were filled to the depth of eight or nine feet. The cattle, by great exertions, were preserved, being mostly in the stall; and the inhabitants, driven to their upper rooms, were relieved by boats plying under the windows. The Thames was so full during this time, that no tide was perceptible; happily, however, its bank suffered no injury; the evacuation of the water from the levels has in consequence proceeded with little interruption, and is now (23d of 2d month) pretty fully effected. No lives were lost in these parts. Several circumstances concurred to render this inundation less mischievous than it might have been, from the great depth of snow on the country. It was the time of *neap* tide; the wind blew strongly from the *westward*, urging the water *down* the Thames; to which add moonlight nights, and a temperate atmosphere, both very favourable to the poor, whose habitations were filled with water.

On the 28th appeared a lunar halo of the largest diameter. On the 29th, after a fine morning, the wind began to blow hard from the south, and during the whole night of the 30th it raged with excessive violence from the west, doing considerable damage. The barometer rose, during this hurricane, one-tenth of an inch per hour. The remainder of the moon was stormy and wet, and it closed with squally weather; which, with the frequent appearance of the rainbow, indicated the approach of a drier atmosphere—a change on few occasions within my recollection more desirable.

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* Birds thus disabled were seen lying on the ground in great numbers in different parts of the country. Nineteen rooks were taken up alive by one person at Castle Eaton Meadow, Wilts.—(PUB. LEDGER.)

See on this subject WHITE, *Nat. Hist. of Selborne*, vol. ii. p. 309.

Additional Notes, &c.—Second Mo. 12. At 9 a.m. the barometer was rising, p.m. it fell again, rose in the evening, fell in the night, and next morning was again found rising: most of these oscillations were of course but small: they were followed by squalls of wind.

The Public Papers give numerous details of inundations consequent on the thaw of the 24th ultimo, which appear to have prevailed in low and level districts all along the east side of the island: but in no part with more serious destruction of property, public works, and the hopes of the husbandman, than in the Fens of Cambridgeshire: where by some accounts 60,000, by others above 150,000 acres of land have been laid under deep water, through an extent of fifteen miles.

The following fact is worth preserving:—"About five hundred sacks were filled with earth, and laid on the banks of the Old Bedford River, at various places, where the waters were then flowing over. This proved effectual in saving that part of the country from a general deluge."

RESULTS.

Prevailing Wind South-west.

Mean height of barometer	29·44 in.
thermometer	40·86°
Evaporation	2·14 in.
Rain and snow	3·38 in.

Portsmouth, Jan. 20.—The whole of this day it has blown a heavy gale from WSW, which now (7 p.m.) continues with unabated fury. A subsequent account says,—"Upwards of five tons of lead, in three pieces, were blown off the roof of the Clock Storehouse, in Portsmouth Dock-yard. One piece, of about thirty cwt. and another of about forty cwt. were carried, in different directions, near forty yards; and the other piece was carried twenty-five yards. It being so extraordinary a circumstance, the pieces of the lead were weighed the next morning, and the distances they fell accurately measured, for the purpose of being registered at the yard."

Plymouth Dock, Feb. 8.—A most tremendous hurricane, accompanied with a very heavy rain, commenced about 11 last night, and has continued ever since without the least intermission. We have had much thunder and lightning here than the late storms.—(PAPERS.)

Earthquakes in Scotland.—Convulsions of the earth, resembling earthquakes, have lately been felt in various parts of the Highlands. One was felt at Dunning, in Perthshire, on the 18th of January, of which Mr. Peter Martin, surgeon, gives the following account:—He was on his way home, about two in the morning, when his attention was suddenly attracted by a seemingly sub-
noise, and his horse immediately stopping, he perceived the sound
from the north-west. After continuing for about half a minute, it
and louder, and apparently nearer, when, all on a sudden, the
pendicular heave, and with a tremulous waving motion, seemed

to roll or move in a south-east direction. The noise was greater during the shock than before it, and for some seconds after it was so loud, that it made the circumjacent mountains re-echo with the sound, after which, in the course of about half a minute, it gradually died away. At this time the atmosphere was calm, dense, and cloudy, and for some hours before and after there was not the least motion in the air. Fahrenheit's thermometer, when examined, about half an hour after the shock, indicated a temperature of 15° below the freezing point of water. The preceding day had been calm and cloudy; thermometer 8 a. m. 14°, 8 p. m. 13°. The morning of the 18th was calm and cloudy, but the day broke up to sunshine; thermometer 8 a. m. 19°, 8 p. m. 16°. About the same time a similar shock was felt at the bridge of Allan, near Stirling, where it was so violent along the foot of the hills as to make the tables and chairs rattle. On the 9th of January, about half-past five in the morning, a smart shock was felt at the village of Comrie, near Crief, the noise attending which was loud and greatly prolonged. During the time of the shock the air was calm and serene. The moon shone bright, and the sky was soon afterwards covered with whitish clouds, moving rapidly from NW to SE. The following is the substance of a letter from Strontian, in the west of Argyleshire: "On Tuesday, the 31st of January, we distinctly felt *five* shocks of an earthquake. It extended over the neighbourhood, and was accompanied with a noise like distant thunder. On Wednesday there was another, on Saturday following there were two more, on Sunday two, and this day (Feb. 6) one. The first, on Saturday, was the most severe; every moveable in my house was displaced, and the building much shaken, but fortunately alarm was the only consequence, as I have heard of no accident. The shocks were distinctly felt by the miners below ground; they continued only for a few seconds, and have all taken place between five and seven in the evening."—(ATHENÆUM).

February 19, 1810.—The greatest cold *last winter* at Moscow was in the night of January 11, when mercury exposed to the open air in a cup was frozen so hard, that it would be cut with shears, and even filed.—(PUB. LEDGER.)

This effect requires a temperature considerably below - 40° of Fahrenheit: indeed the thermometer is said to have been seen at - 44°, ere the quicksilver made its final sudden retreat into the bulb by congealing. The date by our style (if not already corrected) would be the 23d of the month, and probably 1809.

TABLE XXIX.

1809.	Wind.	Pressure.		Temp.		T. No. 2.		Evap.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N. M. 2d mo. Feb. 14	SW	29·67	29·20	52°	41°	49°	41°	9	—
a. 15	SW	29·80	29·53	53	42	54	41	7	5
16	S	29·56	29·52	52	46	51	44	8	3
17	SW	29·80	29·77	55	45	53	44	11	—
b. 18	SW	30·47	29·77	57	35	55	37	10	
c. 19	SW	30·47	30·17	54	45	51	39	9	
20	SW	29·99	29·90	51	38	50	37	10	—
d. 21	NW	30·35	29·99	42	30	41	30	7	—
22	NW	30·32	30·29	44	34	45	32	—	
23	*Var.*	30·35	30·10	52	33	50	36	14	—
24	SW	30·35	30·25	48	38	47	38	6	—
e. 25	W	30·45	30·25	47	29	45	29	—	—
f. 26	SW	30·45	30·37	50	33	48	33	10	
g. 27	SW	30·37	30·33	53	32	50	30	4	
g. 28	SW	30·33	30·24	53	35	51	33	4	2
3d mo. March 1	Var.	30·39	30·24	51	38	50	37	3	11
2	NE	30·45	30·37	47	32	45	31	9	
3	NE	30·37	30·16	46	35	45	32	9	—
4	Var.	30·18	30·13	48	39	46	37	4	—
5	N	30·29	30·18	43	34	41	32	6	1
h. 6	N	30·39	30·29	40	35	39	33	4	
i. 7		30·49	30·39	40	33	39	32	0	
8	W	30·49	30·31	47	32	43	33	2	
k. 9	W	30·31	30·23	55	39	53	39	5	
l. 10	E	30·27	30·23	46	31	48	30	18	
l. 11	NE	30·27	30·09	47	36	45	33	12	
m. 12	NE	30·20	30·09	50	34	49	33	21	
m. 13	NE	30·25	30·20	47	34	45	34	14	
n. 14	NE	30·44	30·25	46	36	46	34	10	—
n. 15	NW	30·35	30·24	48	33			7	
		30·49	29·20	57	29	55	29	2·33	0·22

NOTES.—*a* Cloudy and windy, with showers.

b. The temperature higher at 9 a. m. than for the last twenty-four hours. Barometer wavering. The ground-springs, or those of the superficial strata, began to subside, so that it is now possible to dig without puddling the soil.

much dew. At sunset the *Cirrus* cloud, highly coloured, ng pink tinge in the horizon. Some wind in the night.

ry cloudy; a squall with a little hail, then a fair day.

e. Slight showers, with a clear air the last four days. Lunar halo, small and coloured.

f. Hoar frost; very misty.

g. Still misty weather: coloured halo, as also the following night.

h. Slight showers and misty weather for several days past.

i. A very wet mist this night. The evaporation gauge received an *increase* of about one hundredth of an inch.

k. The atmosphere begins to clear below.

l. Fine clear weather: smart breeze from NE.

m. Much dew, a. m. windy.

n. Cloudy: a little rain from the N, the 14th a. m.

Additional Notes, &c.—Second Mo. 14. During a heavy storm of wind, accompanied by thunder, rain, and hail, the house of a baker in New Navy Row, *Plymouth Dock*, was struck by lightning, and together with the two adjoining houses materially damaged. On the *same day* at *Paris*, the barometer being just past the minimum for the month, the wind very strong at W, with much rain, there was thunder at 6 p m. and a house near the city was struck by lightning. A portion of the bell-wire in this house was dispersed and fixed as a very extensive *stain* in the wall of the apartment: one portion of the iron being thrown off each way, at right angles from the course of the wire, in mossy ramifications; and another above it more perfectly dissipated, in a figure resembling an electrified lock of hair in the midst of a cloud of smoke. The stain measured six feet by four.—(Jour. de Phys. tom. 69.)

Second Mo. 17. Temperature 55° at 9 a. m. 21—25. Occasional slight showers: a pretty clear air but chilly.

Third Mo. 11. *Cirrocumulus* a. m. succeeded p. m. by *Cirrostratus*.

Accidents by Lightning.—The following singular circumstance took place on board the Warren Hastings, recently launched at Portsmouth, while the vessel was moored at the Mother-bank:—The morning being fine, it was deemed necessary to get up the top-gallant masts, which occupied some hours. About three o'clock in the afternoon the atmosphere was overcast to the westward, and every appearance indicated the approach of a violent storm. Several alert sailors were sent aloft to strike the top-gallant masts as speedily as possible, but while lowering them the wind blew tremendously, and the rain fell in torrents, accompanied by heavy claps of thunder. In the midst of the confusion, occasioned by the storm, three distinct balls of fire were emitted from the heavens; one of them fell in the main-topmast cross-trees, killed a man on the spot, and set the main-mast on fire, which continued in a blaze for about five minutes, and then went out. The seamen both aloft and below were almost petrified with fear. At the first moment of returning recollection, a few of the hands ran up the shrouds to bring down their dead companion, when the second ball struck one of them, and he fell, as if shot by a cannon, upon the guard iron in the top, from which he bounded off, into the cross jack braces. Finding that he still survived, he was relieved from his perilous situation, and brought upon deck with his arms much shattered and burnt. This poor fellow was expected to undergo immediate amputation, as the only means of saving his life. The third ball came in contact with a Chinese, killed him, and wounded the main-mast in several places; the force of the air, from the velocity of the ball, knocked *down Mr. Lucas*, the Chief Mate, who fell below, but

was not much hurt. For some time after the storm subsided, a nauseous, sulphureous smell continued on board the ship. Apparent date by the Papers, Feb. 14.—(Athenæum).

RESULTS.

Winds variable; the Westerly have blown longest, and the Easterly with the greatest force; though neither have much exceeded a breeze.

Mean height of barometer	30·17 in.
thermometer	42·46°.
Evaporation	2·33 in.
Rain	0·22 in.

Character of this moon quite the reverse of the last. Barometer remarkably high and steady: temperature rather low and uniform: frequent mists, dews, and hoar frosts; winds moderate and drying; with very little return of water from the clouds; so that much of the period had rather an *Autumnal* aspect. It has been highly favourable to the agricultural business of the season.

Prognostics of Rain from the Habits of Animals.

I have no doubt there are some of these on which we may place considerable reliance, as indicative of a present tendency to rain. I should explain them simply by the supposition of certain feelings in the animal, induced by the present state of the air, and connected with its comfort or preservation.

The "Bucula cœlum suspiciens patulis captavit naribus auras" of Virgil must be familiar to classical readers. I once observed this action of snuffing the air, very decidedly, in a young heifer; and conceived it to be occasioned by the fresh smell of the turf, watered by some showers which had been falling to windward.

Walking to-day (Fourth Month, 6, 1809,) I observed the ducks busy throwing the water over their backs with their heads. Having heard this action cited as portending a shower, I looked up for the cloud: but chancing to direct my view the wrong way, saw nothing like rain approaching, and rejected the prognostic as futile. I had not proceeded, however, ten yards from the spot, ere some drops began to fall from the zenith, and, on a more attentive examination, I found the *Nimbus* behind me. In about an hour it set in for a wet afternoon. Some snow and hail had fallen at intervals, but no rain, for a week past: and the ground was dusty.

The reason of the action I take to be, that these fowls, though so much in the water, do not love to be wet to the skin; and therefore, when warned by the peculiar sensation preceding rain, they presently close their plumage, by throwing a sudden weight of water on their bodies in the direction of the growth of the feathers.

On another occasion I observed several ducks run suddenly out from under a shed, with signs of much gratulation, on the immediate approach of a heavy shower; yet before a single drop had fallen. This action might be connected with the expectation of a supply of food; insects being brought down from the air, and worms and snails out of their strong holds, on such occasions.

Prognostic of Rain from the appearance of the Frog.

I have been informed by a friend, that he sometimes drew a prognostic of rain *from the muddy colours of the frog's skin;* for when the air is depositing water, the skin of this animal is *relaxed* and very moist, and the colours show clear and distinct. When a brisk evaporation prevails, on the contrary, the skin being dry, and somewhat *roughened by contraction*, shows the colours muddy.

Dr. Townson, quoted by *White*, in his "Natural History of Selborne," says, he has proved the fact, that frogs take in and give out their moisture through the skin alone. This I should doubt as an absolute proposition, though I can admit his experiment, showing that one frog, in an hour and a half, absorbed nearly its own weight of water.

TABLE XXX.

1809.	Wind.	Pressure.		Temp.		T. No 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 3d mo. Mar. 16	NW	30·24	30·18	52°	42°			8	
a. 17	NW	30·18	30·15	56	43			6	
18	NE	30·15	30·05	55	37			16	
b. 19	E	30·00	29·97	52	42			14	2
c. 20	Var.	30·12	29·97	53	38			4	
21	E	30·13	30·08	53	39			3	
f. d. 22	S	30·13	29·94	66	37			12	
g. d. 23	Var.	29·94	29·64	64	47			21	1
b. 24	W	29·64	29·32	57	43			10	11
25	SE	29·32	29·11	52	33			5	
e. 26	S	29·30	29·11	55	31			7	
i. 27	E	29·40	29·30	56	36			8	
k. 28	NE	29·71	29·40	56	40			6	15
29	N	29·82	29·71	47	32			3	
30	NE	29·81	29·79	44	39			11	
b. 31	NE	29·79	29·73	50	36			21	
l. b. 4th mo. April 1	N	29·80	29·71	45	30			10	—
m. 2	NW	29·90	29·78	45	27			—	—
n 3	NW	30·07	29·90	46	26			—	—
n. 4	NW	30·29	30·07	43	24			—	—
5	SW	30·30	30·28	44	26			—	—
6	*SW*	30·28	30·17	48	34			26	14
d. 7	Var.	30·33	30·15	50	31			7	
8	SW	30·33	30·12	49	34			13	
9	SW	30·12	29·89	54	40			7	3
10	NW	29·89	29·53	56	45			10	—
11	N	29·77	29·37	53	30			7	15
e. 12	SW	29·77	29·30	52	40			13	3
o. 13	SW	29·30	29·09	53	37			15	10
		30·33	29·09	66	24			2·63	0·74

NOTES.—*a.* The bat and black beetle come abroad. The roads are become unpleasantly *dusty*.

b. Cloudy, windy.

c. c. Very misty mornings. The mist as it broke away on the 27th, exhibited a faint white *bow* in the NW.

d. Much dew.

e. Hoar frost.

7 p. m. a meteor appeared suddenly in the W, and de-
th a slight inclination to the NW, became extinct. This
have been large, or but little elevated, as it was much
s *in the twilight* than the planet Venus.

g. a. m. Very clear atmosphere below; only *Cirrus* cloud above. This soon became *Cirrocumulus*, and p. m. came down, as before thunder, with a dull red halo round the moon. A shower, attended (it is said) with lightning, between 1 and 2 a. m.

i. Coloured *Cirrus* at sunset, and faint large lunar halo at night.

k. A thunder storm passed from W to E in the N about 2 p. m.

l. Showers mixed with hail p. m. At sunset an extensive *blush* of rose-coloured haze, spreading on the face of an opaque twilight, the clouds beneath (mostly *Cirrostratus*) at the same time rapidly dispersing.

m. Showers of hail, or rather of those hard snow balls which form its basis. A huge *Nimbus*, affording these balls, mixed with snow, passed over about sunset: after which the haze, &c. of last evening were repeated.

n. Showers of the kind last mentioned. Many very distinct specimens of the *Nimbus* cloud.

o. Hail has appeared occasionally in the showers for the last few days. Stormy night.

Sussex, *March* 28.—Between one and two o'clock the town of Horsham was visited by a storm (of thunder and hail); the tempest appeared to run in a SW direction, with a thick and gloomy atmosphere, and after many awful flashes of lightning and tremendous explosions, produced *hail* with a degree of violence that dealt destruction to the windows, &c. (The damage done to the *gardens* more especially is here noted.) The hail stones were from two to three inches in circumference, and from their uneven formation appeared like rugged pieces of ice, covering the streets nearly shoe deep. The storm, though so heavy, was limited chiefly to the town.

Manchester.—The mean temperature (April) less than last month; snow and hail have fallen in small quantities. On the 13th, there was a heavy shower of hail, with a high SW wind; the hail stones were very large; the temperature during the storm was lowered 6°.—*Hanson*.

Malton.—Character of the period (April) wet, stormy, and changeable, with much hail and Snow.—*Stockton*.—(ATHENÆUM.)

RESULTS.

Winds Variable.

Mean height of barometer	29·81 in.
thermometer	44·01°
Evaporation	2·63 in.
Rain	0·74 in.

Character, fair and warm to the first quarter: then cold, cloudy, and unfavourable to vegetation. Rain by day 0·30, by night 0·17 in. remainder by day and night.

TABLE XXXI.

1809.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N.M. *a*. 4th mo. April 14	Var.	29·49	29·06	52°	39°			5	22
b. 15	SW	29·49	29·07	52	39			6	26
c. 16	W	29·11	29·87	59	39			15	66
d. 17	NW	29·55	29·11	45	33			3	16
e. 18	N	29·77	29·55	43	30			8	—
f. 19	N	29·77	29·71	49	35			13	—
g. 20	SE	29·71	29·55	46	36			5	—
h. 21	NE	29·67	29·58	50	39			17	79
i. 22	NE	29·99	29·67	50	42			11	
i. 23	E	30·29	29·99	46	41			5	
i. 24	N	30·36	30·30	50	38			6	
25	Var.	30·30	29·90	56	40			5	8
k. 26	SW	29·90	29·69	53	47			3	12
27	Var.	29·69	29·40	56	46			7	6
l. 28	NE	29·64	29·40	56	40			9	11
29	N	29·78	29·74	48	36			15	
m. 30	NW	29·74	29·32	57	43			8	2
5th mo. May 1	NW	29·41	29·32	54	35			7	10
n. 2	W	29·79	29·41	55	33			11	1
3	*SW*	29·85	29·80	53	38			11	
4	SW	29·89	29·86	56	45			—	—
o. 5	Var.	30·22	29·89	57	34			23	3
6	SW	30·31	30·22	63	47			12	
p. 7	SW	30·32	30·28	68	45			13	
8	NW	30·28	30·17	68	38			9	
9	E	30·17	30·04	67	43			27	
10	E	30·04	29·97	71	44			—	
11	Var.	29·97	29·95	75	47			70	
12	SW	29·95	29·93	78	46			25	
q. 13	Var.	29·92	29·88	78	47			30	
		30·36	29·06	78	30			3·79	2·62

NOTES.—*a*. Thunder with large hail, about noon.

b. Windy, showery.

c. Fair day, but with much *Cirrostratus*, and a bank of clouds in the W at sunset: very wet night.

d. Moderate rain the whole day.

e. Snow: hail at intervals; two or three *swallows* on the wing.

f. Hoar frost; steady northerly winds of late.

g. Much snow between 5 and 6 a. m.: hail at noon: steady rain an hour before sunset.

h. The ground white with snow by 2 a. m. of which there fell three or four inches, followed by rain.

i. Cloudy, windy. The land bordering on the Lea is again much inundated.

k. a. m. Steady rain, giving sparks *negative.*

l. The cuckoo articulates. The nightingale has sung since the 25th.

m. After a clear, drying day, appear the returning indications of wind and rain. A wet night and day ensued.

n. Large hail about 11 a. m.: about 2 p. m. thunder in a *Nimbus* bearing SW: soon after four, rain in large drops, giving sparks *negative* as did the air itself afterwards; but there was still a dense shower in the SE in which the bow appeared.

o. A faint red blush on the evening twilight, followed by hoar frost.

p. A strong but not clear twilight; very calm nights of late, with much dew.

q. At sunset a bank of rocky *Cumulus* in the NW surmounted by *Cirrus* pointing upward.

Additional Notes, &c.—Fourth mo. 20. *Cumulostratus* clouds p. m. inosculating with a dense continuous sheet above them. 25. Overcast a. m., a breeze with small rain: *Cirrocumulus* p. m. with *Cirrus* below it pointing downward, and succeeded by *Cirrostratus.* 26. Rain more or less all day.

Fifth mo. 3. A weak negative electricity in a clear air. 4. Maximum of temperature at 9 a. m. windy and overcast. 12. Barometer unsteady.

On the night of the 1st of this month about 10 o'clock, a very brilliant meteor was observed from several places in the neighbourhood of Whitehaven. It is described as having an apparent diameter of five or six inches, with a tail of three feet in length.—(PUB. LEDGER.)

Bath, April 26.—Seldom at this season of the year has so heavy fall of a snow been seen in this climate. The storm (on the 21st) was incessant for nearly eighteen hours, and the ground was covered upon an average to the depth of sixteen inches. In this neighbourhood trees of very considerable size were bent double, and stript of their branches by the weight, and material injury has been done to the orchards.—(ATHENÆUM.)

RESULTS.

Winds Variable.

Mean height of barometer . . .	29·83 in.
thermometer . .	48·58°
Evaporation	3·79 in.
Rain, &c.	2.62 in.

Of which noted by day 0·41, by night 0·72.

Meteorological Observations,

MADE CHIEFLY AT

PLAISTOW, AND OTHER STATIONS,

NEAR LONDON,

IN THE YEARS

1809, 1810, 1811.

TABLE XXXII.

1809.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 5th mo. May 14	E	29·92	29·81	77°	54°			23	
15	E	29·81	29·71	68	50			8	8
16	E	29·80	29·71	75	50			29	
17	SE	29·80	29·76	77	57			39	
18	SE	29·76	29·55	80	61			28	1
19	Var.	29·74	29·51	75	53			14	25
20	SW	29·90	29·74	64	47			12	—
21	*S*	29·95	29·95	63	51			—	
22	Var.	30·23	29·90	69	45			29	
23	NE	30·23	30·14	69	44	72°	41°	27	
24	NE	30·14	30·04	69	48	72	46	29	
25	SE	30·04	29·89	64	50	61	51	11	
26	SW	29·89	29·57	67	54	70	55	20	—
27	S.	29·61	29·57	70	46			22	
28	SW	29·57	29·52	69	51	70	56	—	—
29	SW	29·75	29·48	66	41	68	42	38	25
30	*SW*	29·90	29·78	63	49	66	50		—
31	S	29·80	29·45	66	49	63	53	40	—
6th mo. June 1	Var.	29·35	29·30	76	46	78	51	33	—
2	SW	30·00	29·30	59	42			26	—
3	Var.	30·00	29·64	66	50	71	50	19	7
4	SW	29·64	29·27	67	48	72	49	18	6
5	S	29·56	29·25	66	52	69	43	20	11
6	SW	29·68	29·56	63	49	68	49	20	6
7	SW	29·82	29·75	64	48	69	50	26	—
8	SW	29·75	29·53	62	50	66	49	6	13
9	W	29·56	29·54	61	46	58	47	10	4
10	NW	29·71	29·56	64	50	60	48	12	6
11	SW	30·05	29·71	59	48	58	49		
12	*SW*	30·09	30·09	68	53			24	
		30·23	29·25	80	41			5·83	1·12

NOTES.—Fifth mo. 14. *Nimbi* in the W, and lightning from 10 to 11 p. m.: a small meteor. 15. a. m. thick air to the SE a little rain: about 9 p. m. a *Nimbus* in the S, illuminated by frequent lightning: more distant lightning in the NW. 16, 17. *Cirrus* with *Cirrostratus*. 18. a. m. *Cirrocumulus*: p. m. overcast with *Cirrostratus*. 19. p. m. a most violent storm of thunder, hail, and rain, of which see the particul[illegible] the end. 21. The cuckoo very noisy at eleven at night.

and windy.

1. At night, barometer falling, wind SE, no dew: the clouds, among which is the *cymose*, or waved

Cirrostratus. 2. The foregoing prognostics of stormy weather have been fully verified. In the night, the wind rose and blew a tempest from SE: while it shifted to SW this morning, we had wet squalls of excessive violence: many trees have been blown down and the foliage and young fruit torn off in great quantities. 4. A rainbow at 4 a. m.: showers and wind. 5. Wet morning: stormy evening and night. 6. A brilliant bow at half-past 5 p. m. squally: large *Cirri.* 7. Windy, showers: a bank of clouds in the NW at sunset. 8. Windy: a faint bow at 6 p. m. 9. Windy: a bow near sunset, and an extensive bank on the horizon. 10. Windy. 11. Calm at night.

RESULTS.

Winds Easterly in the fore part of the period, in the latter part Westerly.

Mean height of the barometer	29·73 in.
thermometer	58·09°
Evaporation	5·83 in.
Rain	1·12 in.

Account of the Hail Storm on the 19*th of Fifth Month,* 1809.

The day had been sultry like some preceding ones, and overcast with clouds, which during the afternoon gave evident demonstrations of an approaching discharge of electricity. Large and deep *Cumulostrati* were ranged side by side, mingled with the *Cirrocumulus* and *Cirrostratus,* the whole having that peculiar, almost indescribable character, which these charged conductors assume, when wrought up to the highest state of electric *tension.* About five in the afternoon, being at the laboratory, and perceiving a continued roll of thunder, with vivid lightning approaching from the south, and the appearance of a heavy shower in that quarter, I anticipated a storm of no common violence. We were proceeding to take measures for the safety of some glass utensils, when in an instant there opened upon us a volley of hail of such tremendous force, as in ten, or at most fifteen minutes, demolished most part of the skylights and south windows in the neighbourhood. These *icy bullets,* some of them a full inch in diameter, were discharged almost horizontally from a cloud to the windward, and in such quantity as to be drifted in large masses under the walls. Whether borne by the impetuous blast that came with them, or carrying the air thus before them, I could not determine, but such was the velocity of their motion that in many instances a clear round hole was left in the glass they pierced; and one large pane (which I saw) had *two* such perforations distinctly formed, the glass otherwise whole.

The water in the river, lashed by the hail and raised by the wind, resembled a cauldron boiling violently, rather than waves with breakers. The electrical discharges were incessant, approaching with the cloud, and passing off with it: so that the whole resembled, in effect, the more mischievous artillery of human invention; inspiring, in spite of philosophic reflection, and delight at the grand and unusual phenomena, a sense of actual danger.

This sudden irruption over, it rained for a while moderately. The wind was at first E, then S during the hail, then W, then E, then W again. About seven, the clouds all at once put off their stormy character, and appeared as if going to sleep after this prodigions expenditure of power. The remainder of the evening was calm and pleasant.

A person who was on the road *from London to Bow,* [probably not two miles off,] during the storm, informed me that he experienced nothing but continued thunder and lightning, and *very heavy rain,* the latter appearing luminous on the ground on each side of him; which it often does in heavy storms. It was evident from other circumstances that the hail was bounded in a western direction by the village of Bow: and it reached eastward from thence only about three miles. Its course appears to have been from S to N, over Blackheath, Bromley, Plaistow, West Ham, and so up the country between the rivers Lea and Roding, terminating probably on Epping Forest.

The damage done by the hail was very great: a London newspaper estimated it, from the accounts which reached the editor, at 200,000 squares of glass broken in sashes, skylights, conservatories, hothouses, &c. besides the injury done to the crops in fields and gardens. The foliage of large elms was cut off, and scattered on the ground to a furlong's distance to leeward; and fruit trees, besides being thus stript, received wounds in their bark which were visible long after. A West Indiaman in passing Blackwall during the storm had her fore and main top-sails blown over the side, and one man drowned. We had no account of any individual being struck by the lightning.

Great as was the disturbance of the atmospheric electricity on the above occasion, it was far exceeded in France, at the same season in 1808. *Cotte,* Journal de Physique, T. 68, p. 334, has this note under May 21. " Hail storms, which ravaged twenty parishes in the department of La Loire, and fifteen in that of Lot."

On this day, I observe, the weather changed to wet at London: on the other hand, the day of our hail storm was a wet day, with some thunder at Paris.

A letter from Palermo states, that a fall of snow had taken place in the course of the last month at *Messina,* which for several days lay on the ground to the depth of six inches, *a circumstance* (says the writer) *never before known in this country.*—(PUB. LEDGER.)

Remarkable Hail Storm in Bedfordshire, 19th of Eighth mo. 1800.

The following particulars of a destructive hail storm in Bedfordshire, were communicated to me by my friend and relation, Richard Howe, of Aspley, who showed me the scars then remaining in the stems of fir trees in his plantation, from wounds inflicted by this hail several years before.

There had been thunder showers early in the morning, after which the air cleared up and became very warm. About 7 p.m. after a very heavy clap of thunder and vivid lightning, the hail began, and fell for about ten minutes only; *it consisted of balls of ice, of from six to eight or nine inches in circumference.* A small one weighed above two ounces; the form was an oblate spheroid, the *nucleus* the more transparent part. The cloud had an uncommon, fiery appearance, and there was lightning all the evening after. The next evening, also, much thunder, with heavy continued rain. On the third day, the air much clearer and fine; afterwards showery.

The storm appeared to originate about Fenny Stratford, and passed in a westerly direction over Hogstye-End, Aspley, Crawley, (missing Woburn,) to Ridgemont, Ampthill, and Clophill, where it ceased, having gone fourteen or fifteen miles, with a breadth of, at most, a mile and a half.

The repairs of glass, &c. in this space amounted to several thousand pounds. The corn in shocks, as well as that standing, was in many fields quite thrashed out of the straw.

TABLE XXXIII.

1809.	Wind.	Pressure.		Temp.		T.No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N.M. 6th mo. June 13	*SW*	30·06	29·89	71°	52°	72°	55°	—	
14	*SW*	29·89	29·84	69	53	71	54	24	
15	NW	29·93	29·84	65	43	65	44	9	
16	SW	29·93	29·77	68	51	66	53	18	
17	W	29·78	29·73	73	52	71	51	25	
18	NW	29·85	29·78	65	44	63	43	15	
19	NW	29·97	29·85	72	53	71	53	14	
20	NW	30·17	29·97	78	51	78	52	14	
21	*NE*	30·28	30·17	78	50	78	49	—	
22	SE	30·28	30·25	73	50	73	51	34	
23	E	30·30	30·22	79	52	82	49	23	
24	NE	30·39	30·28	75	55	77	54	24	
25	N	30·39	30·37	70	44				
26	NE	30·39	30·16	67	43				
27	*NE*	30·24	30·16	72	54				
28	*NE*	30·08	30·03	66	52				
29	NE	30·03	29·99	63	48	61	47		
30	SE	29·94	29·90	67	50	65	52		
7th mo. July 1	S	29·94	29·78	72	49	76	49		
2	Var.	29·78	29·73	71	50				
3	NW	29·74	29·49	61	47				
4	Var.	29·48	29·43	60	48	63	47		
5	N	29·51	29·50	62	52				
6	E	29·73	29·63	68	55	69	55		
7	N	29·75	29·74	71	60	73	59		
8	E	29·80	29·77	74	53	78	50		
9	NW	29·80	29·78	68	52	65	51		
10	NW	29·98	29·82	62	50	60	49		
11	NW	30·03	30·02	70	51	71	50		
		30·39	29·43	79	43				

NOTES.—Sixth Mo. 16—18. Windy. 19, 20. A blush on the evening twilight. 22. Cloudy, a little rain p.m.: a *Stratus* at night. 23. The same. 24. Cloudy with wind.

Seventh Mo. 1. Heavy showers a.m. 2. Very wet p.m. 3. Showery. 4. Very wet with thunder p.m. 5, 6. Showers, followed by wind. 7. Evening very stormy: lightning almost incessant, thunder distant. 8. Fair. 9. Very Wet. 10. Wet a.m., fair p.m.

RESULTS.

Mean height of barometer . . . 29·92 in.
thermometer . . 59·37°

consequence of my absence from home, the accounts of Eva-tion and Rain were left imperfect. It appears by the Register of Royal Society, that the guage at Somerset House collected 2·53 in. ain during this period.

***hirlwind.—July* 6.**—The inhabitants of Cirencester were alarmed by the arance of a *Tornado*. It was first observed about three miles to the S of own, where it assumed the appearance of a large conical hay-rick covered smoke. It moved rather slowly at first towards Cirencester, throwing down y trees in the parish of Siddington. Some persons had time to get upon ower of Preston Church to observe its course. When it approached nearer oved with a velocity almost incredible, and making towards the basin of Canal, where it did considerable damage, skirted the town, and entered Lord urst's Park from the Tetbury road. Here its fury seemed to be at its height: imber trees from six to ten feet in girth were torn completely up by the s, whilst others were stript of their branches, or literally cut asunder. r crossing the park it entered an orchard, where it threw down several s and seemed to disperse, as it could no longer be traced by the eye.—(Su er.)

[illegible] XXXIV.

[illegible]	[illegible]	Pressure		Temp.		T. No. 2.		Evap	Ra &
		[illegible]	[illegible]	[illegible]	[illegible]	Max.	Min.		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72°	60°		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	74	47		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72	57		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72	57		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	75	53		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67	50		
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	59	43		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67	54		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72	46		
[illegible]	[illegible]			[illegible]	[illegible]	75	51		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53		
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	80	48		
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	72	57		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	80	58		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76	60		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	73	60		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52	[illegible]	54		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57	[illegible]	57		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52	73	54		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57	71	57		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	55	75	55		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	56	74	58		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	49	70	50		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54	60	49		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57	66	58		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	55	69	52		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53	68	54		
[illegible]	[illegible]	[illegible]	[illegible]	73	54	76	54		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53	80	53		
		[illegible]	[illegible]	[illegible]	[illegible]	81	63		
		[illegible]	[illegible]	[illegible]	41	81	43		

[illegible] windy. 15. A slight show
[illegible]—24. Fair: a *Stratus*
[illegible] began at one a. m. and co
[illegible] vivid. the thunder distar
[illegible] lightning this evenin
[illegible]
[illegible] Heavy rain p. m. 6. The sam
[illegible] Fair. 10. A storm of thunde
[illegible]

RESULTS.

Mean height of barometer · · · 29·75 in.
thermometer · · 61·95°

Rain omitted (together with the Evaporation) through my absence from home. The guage of the Royal Society afforded 1·51 in. up to the 16th of Eighth month, (when my account recommences,) making 4·04 in. for the whole interval: and I found in the cistern of my own, on my return, 3·50 in. a portion (at least equal to the difference) having doubtless escaped.

Effects of Lightning.—Returning from Scotland through Newcastle-upon-Tyne, I was invited to examine the house of David Sutton, then undergoing considerable repairs from the damage done to it by a stroke of lightning during a storm here on the third of the Eighth month. The storm was accompanied with a deluge of rain and hail. The lightning struck a chimney, which it threw down, bringing a quantity of brick and sand into a room, in which a party of eight persons were at tea. I was informed by one present, that *after the first explosion* a ball of fire made its appearance under the door opposite the chimney, where it remained long enough for the whole company to notice it. It then moved into the middle of the room, and separated into parts, which again exploded like stars from a rocket. The electric fluid also split a book-case, tore up the boards of the stairs, broke the glass of the clock, and stopped it, split three bed-posts, throwing the wood about the room, and leaving holes in the ceiling: in short, it seems to have pervaded the whole house, and *every inch of the bell wires* was oxidized and dispersed in beautiful mossy ramifications on the walls.

TABLE XXXV.

1809.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
N.M. 8th mo. Aug.	11	*SW*	29·71	29·63	77°	55°	81°	56°		
	12	*S*	29·63	29·62	66	54	68	53		
	13	*SW*	29·74	29·68	67	54				
	14	*S*	29·89	29·78	66	58				
	15	*E*	29·78	29·75	70	59				
	16	*S*	29·92	29·84	76	55				
	17	SW	29·80	29·76	79	56	80	58	20	44
	18	SW	29·76	29·75	71	55	76	56	17	4
	19	SW	29·92	29·76	69	55	71	56	24	
	20	S	29·88	29·78	67	55	70	56	17	6
	21	SW	29·79	29·76	65	49	66	50	8	—
	22	SW	29·79	29·57	67	49	72	50	22	5
	23	SW	29·57	29·45	67	45	72	48	17	
	24	SW	29·45	29·40	66	46	66	47	19	17
	25	SW	29·77	29·40	66	47	53	47	3	8
	26	SW	29·72	29·67	65	51	64	52	11	—
	27	W	29·96	29·72	65	53	66	53	8	—
	28	Var.	30·06	29·96	69	54	69	55	22	
	29	S	30·06	29·83	65	47	77	57	25	
	30	N	29·80	29·67	78	61	78	56	14	5
	31	SW	29·85	29·84	65	57	63	58	—	
9th mo. Sept.	1	*NE*	29·80	29·79	77	58			—	—
	2	N	29·67	29·57	72	58	78	57	31	19
	3	E	29·57	29·57	72	57	71	59	13	—
	4	E	29·61	29·58	71	58				
	5	Var.	29·57	29·48	74	57	72	57	19	32
	6	SE	29·48	29·22	70	57	70	52	14	12
	7	Var.	29·28	29·20	67	54	65	50	4	4
	8	NW	29·53	29·28	65	50	66	53	7	
			30·06	29·20	79	45			3·15	1·31

NOTES.—Eighth Mo. 17. A fine day: at sunset a dense bank of clouds in the E, low in the horizon, among which the lightning played incessantly. 18. A wet morning. 20—22. Much wind. 24. Showers p. m. with a strong variable electricity: the bow appeared twice. 25. Thunder showers in various directions near us: the rod in high charge, mostly *negative:* rainbow. 26. The rod gave sparks, *positive,* without rain at the time, the sky being overcast with *Cirrus* and *Cirrostratus.* 27. A strong *positive* electricity in an atmosphere very clear below, with *Cumulus* and *Cirrocumulus.* 28, 29. The air *positive* and serene. 30. About 5 p. m. a shower of large warm drops, strongly

tive, heavier rain to the NE: about seven, at temperature 67°
avier shower, *positive:* about nine a third charge in the rod: the
rang much, and the pith balls with their threads showed lumi-
Rain followed, with a changeable electricity, and much thun-
nd lightning in the W.

inth Mo. 5. The wind shifted during a heavy rain from E to W;
hower was once tried and found *positive.* 7. The wind veered
by night.

RESULTS.

Winds chiefly Westerly.

Mean height of barometer . . .	29·66 in.
thermometer . .	61·15°
Evaporation (in 23 days) . . .	3·15 in.
Rain (in the same)	1·31 in.

re was generally much dew, the frequent rains notwithstanding.

TABLE XXXVI.

1809.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
New M. 9th mo. Sept. 9	W	29·63	29·53	68°	54°	66°	53°	13	
10	W	29·65	29·63	63	57	64	49	8	2
11	NW	29·76	29·65	65	53	64	48	8	
12	SW	29·82	29·76	63	46	63	40	8	2
13	SE	29·76	29·64	62	54	64	49	9	26
14	NE	29·95	29·76	64	54	66	52	6	15
15	SW	30·13	30·11	66	44	66	43	9	
16	W	30·11	29·95	64	57	66	55	11	—
17	S	29·95	29·85	63	50	64	48	7	—
18	W	29·67	29·55	64	52	62	51	14	
19	Var.	29·72	29·43	63	42	61	42	8	6
20	W	29·53	29·27	67	54	66	54	21	8
21	SW	29·81	29·57	64	52	62	54	8	17
22	SW	29·67	29·59	69	58	66	61	19	
23	SW	29·80	29·67	65	50	64	50	21	5
24	SW	29·86	29·66	58	53	58	52	11	13
25	NW	29·95	29·80	54	38	53	39	3	27
26	W	29·95	29·45	58	43	56	43	12	1
27	W	28·78	29·33	65	38	62	38	10	13
28	N W	29·94	29·87	55	35	53	36	8	8
29	SW	29·98	29·90	55	39	53	40	8	1
30	Var.	30·12	29·80	58	47	58	45	2	—
10th mo. Oct. 1	N			60	45	58	43	—	—
2	SW	30·32	30·30	61	56	61	55	9	—
3	Var.	30·22	30·17	63	55	63	54	4	
4	E	30·17	30·05	64	40	64	40	13	
5	E	30·05	30·04	63	48	61	46	14	
6	E	30·04	30·02	64	45	62	44	14	
7	NE	30·09	30·02	61	35	59	36	14	
8	E	30·09	30·05	58	42	56	38	17	
		30·32	29·27	69	35	66	36	3·09	1·44

NOTES.—Ninth Mo. 11. Between 5 and 6 p.m. a shower from clouds formed overhead: the rain showed no electricity, but a moderate *positive* charge ensued as it ceased. 14. A hard shower, p.m. mixed with hail: at night heavy rain, with lightning in the S. 18. A [illegible] evening twilight: windy. 19, 20. The same. 21. Lunar [illegible] my. 24. The moon rose clear, but with a red recess [illegible] nd it: the night was stormy. 25. Rain most of the [illegible] ar frosts: windy. 28. A wet squall mixed with [illegible] ness, as if from elevated *Cirri*, at sun set.

Tenth Mo. 4. A steady breeze, E. At sunset *Cirrostratus* in the W, beautifully tinted, and in the E, much dewy haze. 5. Abundance of dew: *Gossamer: Cirrus, Cirrocumulus.* At sunset a dewy haze highly coloured in the E, succeeded by much red in the W. 7. Hoar frost, misty morning: much dew at sunset. 8. Misty: windy: *Cirrocumulus.*

RESULTS.

Winds chiefly Westerly till near the close of the period.

Mean height of the barometer . .	29·84 in.
of the thermometer .	55·20°
Evaporation	3·09 in.
Rain	1·44 in.

Mount Vesuvius.—A letter from Naples, dated the 9th ult. gives the following account of the state of this mountain:—"After a few days of tranquillity, the eruptions of Vesuvius recommenced. On the 4th of September, a new crater opened to the south-east, much larger than that which was formed in 1807. This mouth has, since that time, constantly vomited a vast torrent of lava, which takes its direction towards the town of Torre, formerly destroyed by an eruption of the volcano. This torrent divides in two branches, and forms an island, at the extremity of which the lava unites, and produces a lake of fire, in the district of Atrio del Cavallo. No damage has yet taken place; and there is nothing to be feared, unless the torrent should change its direction, or become more impetuous. In the night of the 5th, as in the month of August, 1782, Vesuvius vomited an immense quantity of stones and ashes, forming upon the mountain a second mountain [of very considerable elevation;] but these substances receiving an impulse absolutely perpendicular, have fallen into the crater, or in its neigbourhood."—(Pub. Ledger.)

Plymouth Dock, Sept. 23.—It has blown quite a hurricane for the last two nights, and about two this morning its violence considerably increased; nor is it now (5 p. m.) much abated, there is still a great surf in the Sound.—Both the last and the preceding nights, we had also an unusually heavy rain. We have scarcely had a dry day these three months.

The General Beresford, Capt. Appleby, from Honduras to Bristol, was totally lost the 21st September, in the Gulph of Florida, during a heavy gale of wind. Capt. A. writes that seven other vessels were lost there at the same time.—(Pub. Ledger.)

TABLE XXXVII.

[illegible]	Wind	Pressure		Temp.		T. No. 2		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
[illegible]	E	[illegible]	[illegible]	52°	35°	51°	33°	20	
[illegible]	E	[illegible]	[illegible]	50	40			27	
[illegible]	E	[illegible]	[illegible]	52	37	50	37	—	
[illegible]	E	[illegible]	[illegible]	51	31	50	29	38	
[illegible]	E	[illegible]	[illegible]	51	29	50	29	—	
[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	52	25	—	
[illegible]	W	[illegible]	[illegible]	52	32	51	32	18	
[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	46	0	—
[illegible]	SW	[illegible]	[illegible]	60	52	59	52	10	7
[illegible]	W	[illegible]	[illegible]	[illegible]	54	57	54	—	
[illegible]	W	[illegible]	[illegible]	[illegible]	52	57	51	15	—
[illegible]	SW	[illegible]	[illegible]	54	50			2	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50	56	50	5	
[illegible]	[illegible]	[illegible]	[illegible]	54	49	52	45	4	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	46	[illegible]	40	—	
[illegible]	SW	[illegible]	[illegible]		[illegible]	[illegible]	45	—	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	45	[illegible]	47	31	
[illegible]	E	[illegible]	[illegible]	57	42	64	41	4	2
[illegible]	W	[illegible]	[illegible]	63	46	58	44	2	2
[illegible]	[illegible]	[illegible]	[illegible]	54	45	57	44	0	3
[illegible]	[illegible]			49	46			0	—
[illegible]	E	30·24	30·07	53	45	52	41	1	3
[illegible]	[illegible]	[illegible]	[illegible]	52	39	51	38	1	1
[illegible]	[illegible]	[illegible]	[illegible]	53	41	52	37	7	
[illegible]	[illegible]	[illegible]	[illegible]	50	37	49	33	8	
[illegible]	[illegible]	[illegible]	[illegible]	47	41	46	38	8	7
[illegible]	NE	[illegible]	29·76	46	37	45	36	1	26
[illegible]	NE	[illegible]	[illegible]	44	36	44	34	1	12
[illegible]	NE	[illegible]	29·84	46	36	45	34	2	2
		30·33	29·76	67	27	64	29	2·05	0·65

[illegible] Fine. 13. Foggy morning: hoar [illegible] cloudy: very misty night. 16. Cloudy. [illegible] which was coloured by the setting sun: [illegible] Cloudy. 23. A *Stratus* [illegible] wind at night. Misty mornings have [illegible] weeks past. 27. Wind N a. m. W evening, [illegible]

[illegible] Misty morning very fine day. 2. Fine clear [illegible] Rain.

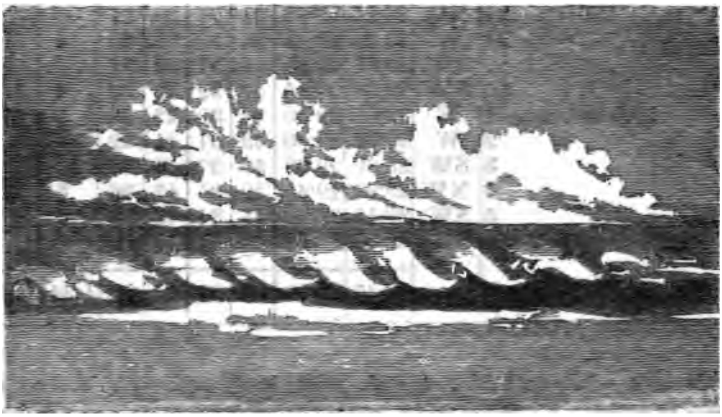
RESULTS.

Prevailing Winds Northerly.

Mean height of the barometer	30·08 in.
thermometer	47·74°
Evaporation	2·05 in.
Rain	0·65 in.

The rain of the 17th, which fell in the midst of a month of fine weather, was probably the effect of a southerly current. The barometer had not fallen three-tenths, and it was high at the time: but the mean temperature on the preceding day had risen 10°, after two or three frosts, and the evaporation was quite suspended. The products of the rain gauge from the 26th to the 31st inclusive were *wholly derived from copious mists and dews.*

On the 25th Thomas Forster found, by means of a small balloon sent up from Clapton about 2 p. m., that there prevailed no less than *four* different currents in the atmosphere, at different heights, in the following order, beginning from the lowest: ESE, N, SW, SSE. The wind below was variable and very gentle, and there were a few clouds in the sky, of the modification *Cirrus.* He found by similar means, on the following day, *three* currents, *viz.* ENE; a little above, SE; and highest, SSW.



The *Fig.* is a specimen of the *cymose* form of the *Cirrostratus,* as observed by Silvanus Bevan, Sept. 4, 1809, at Tonbridge Wells, between nine and ten in the forenoon, looking West.

TABLE XXXVIII.

1809.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N. M. 11th mo. Nov. 7	NW	30·42	30·05	52°	36°	49°	36°	3	
8	NE	30·43	30·41	47	41	46	39	2	
9	N	30·41	30·32	49	45	48	41	—	
10	SE	30·32	30·12	50	42			25	
11	*E*	30·12		43	41			—	
12	SW		29·74	46	41	45	40	7	3
13	NW	29·77	29·72	47	32	45	31	1	
14	N	29·69	29·64	46	35	46	34	6	17
15	N	29·72	29·68	40	28	38	27	—	
16	NW	29·75	29·50	39	27	39	29	17	—
17	W	29·72	29·44	46	27	45	28	—	—
18	N	30·27	29·72	38	29	36	27	—	—
19	NW	30·47	30·27	38	22	36	23	—	
20	NW	30·30	30·24	38	26	37	25	—	
21	W	30·30	30·12	42	30	39	32	—	
22	W	30·12	30·04	51	37	49	42	19	1
23	SW	30·04	29·37	49	41	48	39	—	35
24	NW	29·76	29·37	44	34	42	32	7	1
25	SW	29·76	29·10	45	36	41	34	5	1
26	NW	29·63	29·10	45	26	43	24	—	
27	NW	29·95	29·63	41	27	39	27	—	—
28	W	29·95	29·88	39	33	38	32	4	1
29	SW	29·88	29·85	40	31	39	31	—	
30	SW	29·30	29·25	47	32	45	33	4	32
12th mo. Dec. 1	W	29·60	29·30	44	36	42	33	7	4
2	W	29·92	29·60	43	31	41	32	—	
3	SW	29·60	29·50	50	37	48	37	10	3
4	NW	29·90	29·43	49	35	47	36	5	3
5	SW	30·11	30·00	46	34	48	35	6	
6	SW	30·00	29·82	54	47	54	49	6	
		30·47	29·10	54	22	54	23	1·34	1·01

Notes.—Eleventh Mo. 8—13. Misty mornings. 14. The same: rain at night. 17. Snow early, preceded by much redness at sunset: wind very boisterous during the day, with showers. 18. p. m. The ground covered by several snow showers. 19. Hoar frost. 22. Misty morning: wind. 23. A stormy night. 24. Hoar frost. 25. Wind in the night. 26. Morning overcast: day pretty fine. 27. A very white frost on the ground. 28 Misty day. 29, 30. Misty mornings, the latter a stormy night.

Twelfth Mo. 1, 2. Much wind by night. 3. *Cirrostratus* a. m. with a turbid sky. 5. Hoar frost: windy night. 6. Cloudy, windy: the maximum temperature at 9 a. m.: a brisk gale all night.

RESULTS.

Prevailing Winds Westerly.

Mean height of the barometer . .	29·86 in.
thermometer .	39·32°
Evaporation	1·34 in.
Rain	1·01 in.

Dover, Nov. 27.—It has blown very hard, and several ships have gone past into the Downs with damage.—(Pub. Ledger.)

TABLE XXXIX.

1809.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
N. M. 12th mo. Dec. 7	SW	30·25	29·82	54°	35°	54°	36°	8	4
8	SW	29·82	29·65	48	37	48	39	4	4
9	SW	29·65	29·15	53	42	52	44	8	3
10	SW	29·30	29·10	49	37	47	36	9	15
11	SW	29·45	28·94	46	36	45	36	7	10
12	SW	29·20	29·05	48	36	46	36	12	1
13	SW	29·40	29·20	43	30	45	31	5	—
14	SE	29·20	28·70	44	33	43	33	6	19
15	S	28·83	28·70	41	32	43	30	4	1
16	SE	28·80	28·68	40	31	40	33	3	4
17	SW	28·38	28·25!	44	34	44	38	6	45
18	W	29·22	28·25	42	39	41	37	4	—
19	NW	29·73	29·22	44	34	43	36	4	—
20	SW	29·74	29·60	43	32	43	33	3	11
21	NW	29·95	29·74	44	32	43	34	5	
22	W	29·95	29·90	44	35	43	34	1	
23	Var.	29·93	29·84	37	28			—	—
24	SW	30·05	30·00	36	28			3	3
25	Var.	30·05	29·77	43	35			2	8
26	Var.	29·83	29·74	43	38			1	7
27	W	30·10	29·83	41	34			2	1
28	SW	30·10	29·75	45	33			3	—
		30·25	28·25	54	28			1.00	1·36

NOTES.—Twelfth Mo. 8. Misty: very slight hoar frost: windy night. 9. Misty a. m., stormy night: the barometer had descended lower and was found rising. 10. The day pretty calm, the night windy. 11. A lunar halo, large and faint: at night the wind rose again and blew very hard till morning, with rain. 12. A squall at 11 a. m. with rain and some hail. 13. At 8 a. m. several *Nimbi* to the S; hoar frost: about 1 p. m. a squall with rain and hail. 14. Hoar frost, misty: at evening a large lunar halo: the fore part of the night a violent storm from the SE. 15. a. m. calm with *Nimbus*. 16. Hoar frost, calm and cloudy, with *Cirrostratus* and *Nimbus;* a large lunar halo just perceptible: rather windy night. 17. The wind now and then strong, but on the whole moderate by day: the night stormy and very wet. 18. a. m. very dark with clouds. The barometer very unsteady, having thrice changed its direction since last time of noting. 19. Windy. 20. a. m. calm and cloudy: wind moderate afterwards, with rain. 21. Hoar frost, with frozen drops of considerable size adhering to the grass. *Cirri* p. m. in fine groups: clear night. 22. Hoar frost. 23. Misty. 24. Snow, a. m. 25, 26. Misty, overcast. 28. Cloudy, after a windy night. 29. Much wind by night: the rain came from the NW.

RESULTS (of twenty-two days.)

Prevailing Winds Southerly.

Mean height of the barometer . .	29·44 in.
thermometer .	39·20°
Evaporation	1·00 in.
Rain	1·36 in.

Of which there fell by night 1·15 in. by day 0·09 in.

This great and long-continued depression of the barometer came to a *crisis* on the 18th of Twelfth month at seven in the morning: from which time a steady equable rise took place for twenty-four hours: and was prolonged at a less rate, for three or four days after. The depression was very extensive, being probably not limited by the northern, and certainly not by the southern extreme latitude of our islands. Thus, at Manchester, the barometer descended to 28 in. *(Hanson;)* and at Paris it was down on the 17th to about 28·5 in English, *(Journ. de Physique,)* the wind there being SSE, and the weather stormy and wet. In fact, during a series of tempestuous *nights,* (it was chiefly by night that the barometer fell,) the whole Northern Atlantic atmosphere appears to have been in general and rapid motion to the northward. Yet the rapid rise of the barometer was not (in this neighbourhood) connected with any violent movement in the contrary direction.

State of the Barometer within 36 *years.*—By the Register of Mr. John Mills, of Bury, it appears, that on the 12th of Jan. 1773, it was at 28·25.—On the 11th of March, 1773, at 28.—On the 20th of Jan. 1791, at 28; and on the 17th and 18th of Dec. 1809, at 28.—(PAPERS.)

Deal, Dec. 12.—We have experienced a very heavy gale of wind from the SSW the greater part of last night and this morning, and it still continues to blow very hard.—(PUB. LEDGER.)

Plymouth Dock, Dec. 13.—It has blown a strong gale at SSW for several days past, and still continues, accompanied with heavy deluges of rain.—(PUB. LEDGER.)

Greenock, Dec. 15.—The Mars, Captain Harvey, arrived here yesterday from Quebec, and has experienced, since the 3rd instant, the most severe weather. To preserve the ship a considerable part of the cargo was thrown overboard.—(PUB. LEDGER.)

Montrose, Dec. 16.—The whole coast is strewed with wreck.—(PUB. LEDGER.)

Plymouth, Dec. 16.—Wind SW. The violence of the wind on Thursday night has seldom been exceeded, even in this place, which is exposed to the furious blasts of the Atlantic. It suddenly veered round to the SE, and threw such a tremendous swell into the Bay, that the Temeraire was for some time in great danger of foundering.—(PUB. LEDGER.)

Greenock, Dec. 18.—The Argus, Fortune, from Le Have, in Nova Scotia, arrived at the Tail of the bank on Saturday morning last, after a passage of thirty-two days, during a great part of which she experienced very heavy gales of wind.—(PUB. LEDGER.)

Torbay, Dec. 18.—It has blown quite a hurricane from the S and W the whole of the last week.—(PUB. LEDGER.)

Plymouth, Dec. 18.—We are still visited by the same severe blowing weather latterly noticed. The wind has now shifted to the north, and seems inclinable to veer round to the eastward.—(PUB. LEDGER.)

Deal, Dec. 18.—It blew very hard last night, and early this morning, from the S, and SSW.—(PUB. LEDGER.)

Whitehaven, Dec. 19.—We have had nearly a week of the most stormy and tempestuous weather that can be imagined, particularly on Friday morning, when there was a most violent gale of wind from the southward, accompanied with hail and sleet, which was followed by a very heavy rain. On Friday evening, there was a very awful storm of thunder and lightning, such as, perhaps, was never witnessed here at this season of the year; the latter was uncommonly vivid, and the peals of thunder were exceedingly loud, and in rapid succession. It continued, with little intermission, the whole night. Several chimnies have been blown down, roofs damaged, &c. We learn, that a great deal of snow has fallen in the interior of the country. It is said to be lying in drifts of nine feet deep in some places on the east side of this county, and the adjoining part of Northumberland.—(PUB. LEDGER.)

The Meteor called Falling Stars in connexion with an Earthquake.

Cape of Good Hope, Dec. 8, 1809.—On the 5th instant we were still in a state of alarm, on account of the earthquake the night before at half-past ten: we had three successive shocks of a tremendous nature, accompanied by a most awful sound. The whole lasted about three minutes, with an interval of hardly two seconds between each shock. During all the time there was a serene sky: the stars shone bright, but we observed *an uncommon number of stars falling*.—(TIMES.)

Meteorological Observations,

MADE AT

STRATFORD,

AND AT

CLAPTON NEAR LONDON,

IN THE YEARS

1810 and 1811.

Having ceased to publish my Observations when the ATHENÆUM was discontinued at Midsummer, 1809, I did not resume the *printing* of them for three years. In this interval, from causes which it is not important to mention, they were more than once interrupted; and as it will be found in the conclusion of this work, that a continuity of Observations in the same neighbourhood is of greater importance than I then supposed, I have endeavoured to supply the deficiencies in the following manner:—I take the variations of the Barometer for a part of the years 1810 and 1811, with remarks on the clouds and state of the sky, from the Register of my friend *Thomas* [*now Doctor*] *Forster*. His Notes will be found to contain much curious matter. With respect to his Barometer I find it range about a *tenth of an inch higher* than my own, instead of as much lower, which it would have done, from the higher level of Clapton, had the two been adjusted: notwithstanding which I prefer its results to those of the Barometer then used at the Laboratory. The Observations of my partner, *John Gibson*, at the latter station, in great measure supply the materials for the remainder of the deficient Tables. I shall distinguish the *Notes* from each other by affixing the initials of their respective authors.

TABLE XL.

1809.	Wind.	Pressure. Max.	Pressure. Min.	Temp. Max.	Temp. Min.	T. No. 2. Max.	T. No. 2. Min.	Evap	Rain, &c.
L. Q. 12th mo. Dec. 29	NW	29·70	29·50	49°	41°	48°	40°	9	6
30	W	29·86	29·68	50	41	49	41	8	
31	SW	30·09	29·98	51	45	50	44	7	
1810. 1st. mo. Jan. 1	SW	30·22	30·09	51	45	50	45	5	
2	S	30·22	30·10	45	40	46	41	3	
3	SW	30·25	30·10	50	43	49	42	3	
4	S	30·34	30·25	50	44	51	44	4	3
5	SE	30·30	30·25	47	44	47	40	5	
6	SW	30·31	30·22	49	42	48	40	4	
7	S	30·22	30·00	43	37	44	37	3	
8	SE	30·00	29·85	46	39	45	39	1	—
9	S	29·95	29·85	48	42	48	38	—	—
10	SE	29·98	29·90	43	41	44	40	6	
11	SE	29·90	29·87	46	42	47	41	5	—
12	E	29·94	29·87	44	32	44	31	14	—
13	E	30·03	30·01	33	27	33	26	—	
14	NE	30·01	29·89	30	24	28	23	—	—
15	N	29·89	29·78	28	16	27	13	—	—
16	NW	30·02	29·78	28	10	25	13	—	—
17	SE	30·26	30·02	31	14	30	17	—	—
18	Var.	30·28	30·25	36	20	34	18	—	—
19	E	30·25	30·19	31	14	30	14	—	—
20	NE	30·19	30·05	29	21	29	16	—	—
21	E	30·05	29·97	36	30	35	28	—	—
22	E	30·09	29·95	33	32	33	31	35	—
23	N	30·22	30·09	37	33	36	32	1	3
24	Var.	30·31	30·20	38	33	37	31	3	
25	NE	30·36	30·31	33	31	33	29	—	
26	E	30·31	30·26	36	31	35	30	—	
27	NW	30·26	30·22	31	30	31	29	5	
		30·36	29·50	51	10			1·21	0·12

NOTES. Twelfth Mo. 29. Much wind in the night. 30. The same. 31. Windy, overcast.

1810. First Mo. 1, 2. Windy, cloudy. *Cirrostratus, Cirrocumulus.* [illegible] Fine grey morning, with the wind SE. *Cirri* pointing upward and westward p. m. after which much loose *Cumulus.* 6. a. m. wind SW pretty clear. 7. Grey morning. 8. a. m. quite overcast: a little [illegible] from SE. 9. Very cloudy a. m. the wind rising at S, with [illegible] 11. Fair, though cloudy. 12. Overcast, drizzling: a [illegible] which increased at night to a strong wind: this continued [illegible] morning, the evaporation being more than double in consequence. 14. Snow, a. m. from N. E. In the evening I observed wild ducks migrating to the W, the temperature 22°, with a breeze at N. The wind then passed to W, and blew strong. 16. Wind a. m. SW. Snow at intervals most of the day, crystallized in stars. 17. Much rime on the trees a. m., a little snow in the night. 18. Hail balls a. m., snow at intervals. 19. At night misty, with much rime and some hail balls. 20. A very clear day with us, though mist and smoke prevailed to the S: the trees being quite shrouded in rime, were extremely beautiful. After sunset the temperature went down to 21°, then rose again by 10 p. m. to 26°, the wind springing up at NE, with cloudiness. 21, 22. Snow in stars. 23. Misty a. m., a little rain and sleet p. m. 24. Very cloudy: small rain. 25, 26, 27, Misty.

RESULTS.

Winds Westerly in the forepart, afterwards Northerly and Easterly.

Barometer:	Greatest height . . .	30·36 in.
	Least	29·50 in.
	Mean of the barometer .	30·07 in.
Thermometer:	Greatest height . .	51°
	Least	10°
	Mean of the Thermometer	36·43°
Evaporation	. . .	12.1 in.
Rain . . .	. . .	0 12 in.

TABLE XLI.

1810.	Wind.	Pressure.		Temp.		T. No.2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1st mo. Jan. 28	NW	30·32	30·22	31°	30°	31°	28°	—	
29	E	30·48	30·32	34	31			—	
30	Var.	30·48	30·39	32	30	34	29	—	
31	SW	30·39	30·16	47	30	47	32	7	5
2d mo. Feb. 1	SW	30·16	30·08	50	47	49	44	—	—
2	Var.	30·08	29·77	47	42	49	42	4	18
3	Var.	29·87	29·68	46	42	46	40	1	3
4	NW	30·07	29·87	45	30	44	28	—	
5	SW	30·07	30·03	48	30	44	31	10	
6	SW	30·03	29·95	47	44	47	40	5	—
7	S	29·96	29·93	49	44	50	44	4	—
8	SE	29·93	29·82	48	42	46	42	5	2
9	SW	29·76	29·73	47	42	49	44	3	—
10	NW	29·85	29·76	54	42	50	40	6	2
11	E	29·76	29·40	43	39	43	38	—	17
12	SW	29·40	29·04	43	36	40	36	3	23
13	SW	29·28	28·98	45	33	42	31	1	11
14	NE	29·67	29·28	43	33	40	34	18	—
15	NW	30·08	29·67	39	23	39	23	—	
16	N	30·12	30·08	41	25	38	24	—	—
17	N	30·22	30·18	38	22	35	22	—	
18	SW	29·98	29·84	34	26	34	24	—	—
19	N	30·24	29·98	35	23	34	22	—	—
20	NW	30·49	30·24	33	11	30	11	—	—
21	Var.	30·50	30·30	32	14	31	17	—	
22	SW	30·30	29·50	36	29	36	28	—	—
23	SW	29·54	29·40	45	36	44	36	—	—
24	SW	29·48	29·45	50	43	50	41	—	10
25	W	29·91	29·48	50	35	49	35	40?	1
		30·50	28·98	50	11			1·07	0·92

NOTES.—First Mo. 28. In the evening some lightning in the NE: very calm: sleet. 29. Grey morning: calm: barometer fluctuates, scarce any sun for a week past. 31. The wind changing to SW with rain, a period was put to the continued stagnation of temperature about the freezing point; which, with cloud and calm, has obtained ever since the full moon.

Second Mo. 3. A breeze at N a. m. 7. A little rain a. m. 10. The wind shifting suddenly to NW, brought the smoke of the city over us in the unusual form of a dense *elevated cloud,* with a clear space below: a little rain, and *Cumulostratus* followed. 11. Wind pretty strong:

cloudy and drizzling. 12. Very misty. The barometer has fallen 0·36 in. with a steady wind at E. The night was windy at SW, with some snow afterwards. 13. Squally. 15. A little snow: a lunar corona. 16. Hoar frost: some snow in the night: the moon showed of a *golden* colour. 17. Very fine day: large *Cumuli:* the moon *pale* at night, with a purplish colour round it. 18. Overcast a.m., much snow p.m. a slight thaw. 19. Clear morning, snowy evening. About nine, at the breaking of the clouds, the sky presented a fine spectacle. For some space around the full moon, it was of the usual lively grey; next to this appeared a pink, or pale rose colour, deepening as it receded towards the horizon. Against this unusual ground the silver lights, common to the broken *Cumuli,* were degraded to a cream colour, not less beautiful: and as any of these passed under the moon, they presented iridescent *spectra,* in which the red and blue were uncommonly vivid and distinct. These appearances were doubtless owing to the presence of an unusual quantity of frozen haze, out of which the snow was all the while forming. 20. About 11 a.m. a pinky haze appeared in a snow storm under the sun, as before under the moon. 27. A fine day. 28. Windy night.

RESULTS.

Winds Variable, but for the most part Westerly.

Barometer:	Greatest height	30·50 in.
	Least	28·98 in.
	Mean of the period	29·91 in.
Thermometer:	Greatest height	50°
	Least	11°
	Mean of the period	37·36°
Evaporation		1·07 in.
Rain		0·92 in.

TABLE XLII.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2nd mo. Feb. 26	*S*	29·88	29·78	49°	42°	49°	38°	—	—
27	*SW*	30·01	29·72	54	47	54	38	17	—
28	SW	30·01	29·86	56	39	53	40	11	—
3rd mo. March 1	SW	29·86	29·69	54	51	54	48	7	—
2	W	29·69	29·57	54	44	54	45	1	5
3	SW	29·68	29·54	54	32	56	32	3	10
4	Var.	29·54	29·24	50	40	49	39	1	22
5	Var.	29·24	28·92	46	31	44	32	4	36
6	SW	28·92	28·81			41	32	—	—
7	SW	28·96	28·81	48	36	46	38	8	14
8	S	29·11	28·96	54	46	53	45	8	5
9	SW	29·36	29·11	58	50	57	50	1	19
10	SW	29·90	29·36	60	46	57	46	—	
11	SW	29·90	29·68	57	50	57	50	24	48
12	Var.	30·00	29·68	56	48	54	39	—	—
13	NE	30·00	29·95	48	38	44	36	13	—
14	E	30·02	29·86	42	32			20	
15	E	29·86	29·57	40	34	40	32	—	
16	E	29·66	29·57	40	35	40	32	—	
17	NE	29·89	29·66	43	30	41	28	44	
18	E	29·95	29·89	45	24			—	
19	SE	30·04	29·95	47	28			—	
20	N	29·95	29·80	50	31			—	
21	N	29·93	29·70	50	31	48	34	28	
22	NE	30·17	29·95	45	27	43	24	—	
23	NE	29·95	29·76	52	26	51	25	—	
24	E	29·80	29·76	50	35	48	31	44	
25	E	29·92	29·84	41	33			53	
26	E	29·92	29·77	43	34			19	
27	SW	29·66	29·61	55	42			9	10?
		30·17	28·81	60	24			3·15	1·69

NOTES.—Third Mo. 1. Misty, drizzling. 2. Cloudy. 3. Much drizzling rain p. m. 4. Wet night. 5. Snowy forenoon. 7. The Lea has risen over its banks. 9. A heavy squall about 1 p. m., with rain:
at night: much water out. 11, 13, 14. Windy: cloudy. On
vening a remarkable lunar halo. A circle of *white* sur-
on at a considerable distance, which was well defined
as to make the included space appear dark,
faded insensibly into the colour of the sky.
17—20. Hoar frosts. In the day time, during

this interval the *Cumulus* appeared, passing to *Cumulostratus*, and evaporating at evening. 21. Much wind at times in the night. 22, 23. Hoar frosts. 24, 25. The deposition of dew suspended. 26. A moderate gale at E, as yesterday. 27. Cloudy a. m., a breeze at SE: wet p. m.: night windy, SW. The rain of this day is put down by estimate.

RESULTS.

Winds Westerly in the forepart with rain, afterwards Easterly with a dry atmosphere.

Barometer:	Greatest height	30·17 in.
	Least	28·81 in.
	Mean of the period	29·67 in.
Thermometer:	Greatest height	60°
	Least	24°
	Mean of the period	42·08°
Evaporation		3·15 in.
Rain		1·60 in.

A Friend who went from our neighbourhood to reside this winter at Cowley Bridge, near *Exeter*, has favoured me with the following Observations made there with a Six's Thermometer, during the Second month. The place is two miles and a half above the city on the bank of the Ex.

1810.	Max.	Min.	1810.	Max.	Min.
2d Mo. Feb. 1	54°	46°	2d mo. Feb. 15	34°	18°
2	51	44	16	35	29
3	46	40	17	34	18
4	45	27	18	39	31
5	45	29	19	36	33
6	52	42	20	36	17
7	51	35	21	34	25
8	51	38	22	45	30
9	55	38	23	50	44
10	55	38	24	54	47
11			25	52	34
12	44	43	26	53	45
13	44	38	27	57	42
14	45	32	28	58	45

The mean temperature of this month near Exeter, appears by the above observations to have been 40°, while with us it was 39°—the extremes, 58° and 17°; with us 56° and 11°.

Portsmouth, March 25.—Wind Easterly. It has blown very hard all day, and still continues.

Deal, March 25.—Wind NE, blows hard.—(PUB. LEDGER.)

TABLE XLIII.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3d mo. March 28	W	29·90	29·66	52°	36°	51°	36°	22	
29	Var.	29·92	29·88	55	35	52	36	10	
30	SW	29·88	29·75	51	41	54	41	6	7
31	S	29·75	29·42	52	41	55	40	—	4
4th mo. April 1	E	29·69	29·42	52	42	54	40	12	17
2	SE	29·73	29·60	52	40	52	41	6	2
3	SW	29·40	29·35	58	41	59	39	7	7
4	W	29·70	29·40	50	34	47	35	9	
5	SW	29·70	29·36	54	42	50	41	12	
6	SE	29·36	29·30	48	41			7	2
7	SE	29·45	29·30	52	41	55	39	6	
8	E	29·47	29·45	56	42			15	10
9	E	29·50	29·40	53	43	53	42	8	35
10	NE	29·65	29·50	45	34	43	33	7	14
11	NE	29·90	29·65	43	33	42	32	—	—
12	NE	29·92	29 88	42	30	42	29	—	
13	Var.	29·92	29·86	42	33	43	32	26	—
14	SW	29·86	29·82	48	35	48	34	8	
15	SW	29·82	29·57	52	33	54	34	17	
16	Var.	29·50	29·37	52	36	51	37	12	10
17	SW	29·60	29·54	56	41	56	40	—	
18	S	29·72	29·54	60	43			33	
19	S	29·90	29·72	61	47				
20	NE	30·12	30·07	63	44				
21	W	30·12	30·12	61	43				
22	W	30·12	30·12	66	45				
23	E	30·18	30·12	71	46				
24	E	30·18	30·13	74	37				
25	NE			65	41				
		30·18	29·30	74	30			2·23	1·08

NOTES.—Third Mo. 28. A little rain. 29. A shower mixed with hail about noon.

Fourth Mo. 3, 4. Cloudy: much wind. 5. A fine day: 6 a. m. much wind and cloud from the S. 7. The trees dripping, as from a mist this morning. 8. Windy. *Cumulostratus* was formed by inosculation, and passed to *Nimbus*. 9. Windy, cloudy: steady rain p. m. 10. A stormy wet day. 11. Snow in small quantity. Hail mixed in at intervals. 13. A little snow and some hail balls. 18. A allow: bats on the wing: stormy indications p. m. Some very tions in the W and NW last night. 19—25. Fine days.

[NOTES, T. F.—*March* 30. *Cirrocumuli.* *April* 6. The max. of the Therm. happened at 11 p. m. 14. *Cirrostratus.* 15. *Cirrocumulus.* 16. *Cirri,* in short tufts pointing to the SE, succeeded by rain. 17. *Cirrostratus.* 18. *Cirrocumulus.* 19. Very hazy noon. 20. The swallow and martin observed in the neighbourhood of West Ham. 21. Swallows first seen at Clapton. 22. Cuckoo first heard. 23. *Cirrostratus.* 24. *Cirrocumulus.* The air has been extremely dry ever since March 30th.]

RESULTS.

Wind variable, with a large proportion of Easterly.

Barometer:	Greatest height . . .	30·18 in.
	Least	29·30 in.
	Mean of the period . .	29·89 in.
Thermometer:	Greatest height . . .	74°
	Least	30°
	Mean of the period . .	47°
Evaporation (in 22 days) . . .		2·23 in.
Rain		1·08 in.

TABLE XLIV.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 4th mo. April 26	E	30·08	30·00	64°	42°			26	
27	E	30·09	30·05	60	35			42	
28	E	30·09	30·05	67	34			30	
29	NE	30·05	29·96	72	37			33	
30	NE	29·96	29·85	75	37			36	
5th mo. May 1	NW	29·85	29·83	67	42			30	2
2	NE	29·83	29·71	57	39			7	
3	NW	29·73	29·70	58	35			8	
4	Var.	29·80	29·70	53	36				
5	NE	29·85	29·80	53	37				
6	NE	29·80	29·78	52	32				
7	NE	29·78	29·45	51	38				
8	SW	29·67	29·41	53	46				
9	S	29·81	29·75	63	40				
10	W	30·02	29·90	63	47				
11	E	30·07	30·02	66	56				
12	NE	30·02	29·92	58	41				
13	NE	29·92	29·80	61	52				
14	NE	29·80	29·48	63	47				
15	Var.	29·48	29·30	62	48				
16	NW	29·41	29·38	55	50				
17	S	29·41	29·39	63	51				
18	E	29·65	29·41	49	35				
19	SE	29·96	29·65	50	35				
20	SE	29·95	29·80	63	34				
21	SW	29·80	29·58	61	45				
22	Var.	29·88	29·80	63	42				
23	NW	30·06	29·88	60	36				
24	NW	30·15	30·06	63	37				
		30·15	29·30	75	32				

NOTES.—Fourth mo. 26—30. Clear days with dew and hoar frost: a strong breeze on the 27th, whence so great an evaporation.

Fifth Mo. 1. Wind N at intervals: no dew. 2. Cloudy morning: in the evening *Cirrocumulus*, which changed to *Cirrostratus*. 3. At 5 a. m. the same modication, and about 8, a refreshing rain. 5, 6. Fair. 7. Dripping. 8. Showers. 9. Cloudy. 10. Little rain. 11, 12. Fair. 13. Dripping. 14. Windy. 15. Rain in the night. 16. Rain a. m. 17, 18. Wet. 19, 20. Fine. 21. Wind and some rain. 22—24. Fine.

RESULTS.

Winds chiefly Easterly.

Barometer:	Greatest height	30·15 in.
	Least	29·30 in.
	Mean of the period	29·80 in.
Thermometer:	Greatest height	75°
	Least	32°
	Mean of the period	50·53°

Having been during part of this period at the coast on account of indisposition, the Observations on the Barometer and Thermometer were continued by my son: a few omissions are supplied from those made at Stratford. The Evaporation and Rain were not registered further.

A *Whitehaven* Paper of the 11th says: the weather for some days past has been the coldest ever remembered at this season of the year; there has been a sharp frost every night—the Isle of Man and the Scotch hills are covered with snow: some vessels had six inches of snow upon their decks.

At *Manchester* on the morning of the 5th, the temperature was 27°, and on the two following days there were slight falls of snow with a high wind at N. On the 8th, frequent heavy showers of hail, wind NE.—*Hanson.*

At *Malton,* the wind in May was N, NE, or E, for twenty days, and the mean heat of the month 47°.—*Stockton.*

The Papers make mention of hail storms in the west of France, on the 18th and 19th of this month, which were very destructive to the corn and vines; more especially in a district about *Nerac,* where "people who were in the fields were obliged to fly, covered with contusions, to whatever shelter they could find, and numbers of birds and poultry were found dead:" in another place, "some of the hail stones were as large as a goose's egg; and every pane of glass exposed to the storm was broken."

TABLE XLV.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 5th mo. May 25	N	30·18	30·10	70°	36°				
26	NE	30·08	30·00	73	37				
27	NE	30·00	29·98	68	46				
28	N	30·29	30·10	63	32				
29	E	30·41	30·40	69	34				
30	E	30·41	30·36	69	40				
31	E	30·37	30·35	74	42				
6th mo. June 1	E	30·40	30·30	74	40				
2	E	30·29	30·27	79	42				
3	NE	30·31	30·29	72	39				
4	Var.	30·30	30·25	76	44				
5	NE	30·30	30·29	58	45				
6	Var.	30·28	30·28	72	53				
7	Var.	30·18	30·15	74	49				
8	Var.	30·14	30·07	78	55				
9	Var.	30·01	29·95	79	57				
10	Var.	30·00	29·95	72	45				
11	NW	30·00	29·95	66	52				
12	W	30·00	29·92	67	51				
13	W	30·00	29·92	66	43				
14	NW	30·21	30·13	63	44				
15	NW	30·29	30·19	70	39				
16	NE	30·00	29·90	66	37				
17	N	30·00	30·00	70	40				
18	W	30·00	30·00	73	55				
19	W	30·00	29·98	71	58				
20	SW	30·20	30·00	73	55				
21	W	30·20	30·20	76	61				
		30·41	29·90	79	32				

NOTES J. G.—*May* 27. A shower in the evening. 28. A thunder storm at night, the wind SE, lightning nearly incessant, and vivid: some heavy showers. 29. Considerable rain p. m.

June 4. Wind NE about nine: in the course of the day it shifted round against the sun, fixing in the NE in the evening. 10. A slight shower a. m., distant thunder p. m. 13. Some refreshing showers in the course of the day. 18. Lunar halo. 20. Showers p. m.

NOTES T. F.—*June* 2. *Cirrus, Cirrostratus,* and fleecy *Cumulus* observed. The *Cirrostratus* in particular was highly coloured. 3. Small meteors, usually called falling stars, seen this evening.

4. *Cirrostratus.* 5. Black clouds which threaten rain. 7. Distances very hazy. 13. *Cirrostrati* early this morning. 17. *Cirri* early. About 5 p. m. I observed the modification of *Cirrostratus* approximating to *Cirrocumulus,* and disposed in long arcs extending from N to S, passing on gently with the wind. 18. Towards evening, an apparent confusion of the electrical state of the two sheets of clouds took place, which threatened rain.

The weather has been so dry for the last three weeks, that all my hygrometers have ceased to be of any use.

RESULTS.

Winds Easterly in the fore part, with dry weather; Westerly with some showers, towards the end.

Barometer:	Greatest height . . .	30·41 in.
	Least	29·90 in.
	Mean	30·14 in.
Thermometer:	Greatest height . . .	79°
	Least	32°
	Mean	54·20°

The case of a house struck by lightning at East Thriston, (see the note,) suggests *two precautions* in a time of thunder storms—not to suffer loaded fire-arms to be about, as the least spark of electricity reaching the powder will cause it to explode—and, on having reason to suppose that any part of a building has been struck, immediately to see that no combustible matter has been kindled by the iron, which may have conducted the electric fluid, and in so doing have been heated or even melted.—L. H.

June 4.—In a tremendous storm of thunder and lightning, the electrical fluid entered the house of Mr. Cowens, farmer at East Thriston, shivered to pieces a press-bedstead in the kitchen, ran along and melted the bell-wires attached to three rooms; in the parlour a closet-door was split. At this moment Mr. Cowens came in, and his dog, which was close behind him, was killed; *a loaded gun in the passage exploded soon after.* When the alarm had a little subsided, it was discovered that the rooms on the second floor were on fire, the lightning *having set fire to the curtains and bed-hangings;* the flames were, however, soon happily extinguished. In the staircase window, which fronts the east, there is only one pane of glass left whole.—(Pub. Ledger.)

TABLE XLVI.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 6th mo. June 22	Var.	30·20	30.20	74°	48°				
23	SE	30·40	30·20	75	44				
24	SE	30·20	30·20	81	50				
25	NE	30·20	30·11	83	57				
26	N	30·11	30·04	60	49				
27	NW	30·04	30·00	67	47				
28	E	30·06	30·05	74	55				
29	SE	30·10	30·04	75	50				
30	Var.	30·18	30·14	75	50				
7th mo. July 1	Var.	30·18	30·14	76	59			14	20
2	W	29·85	29·84	76	56			30	
3	S	29·79	29·44	70	53			11	24
4	SW	29·64	29·44	62	51			9	22
5	Var.	29·91	29·81	69	58			10	
6	W	30·05	29·95	72	49			14	
7	SW	30·05	30·02	79	52			23	
8	Var.	29·90	29·88	73	52			9	17
9	W	29·99	29·86	72	59			24	5
10	SW	29·80	29·79	75	48			19	—
11	Var.	29·69	29·55	81	59			—	—
12	W	29·69	29·61	74	59			36	42
13	S	29·69	29·65	74	55			29	
14	SW	29·91	29·75	67	50			13	34
15	N	30·10	29·96	68	49			12	6
16	W	30·13	29·97	65	52			10	20
17	Var.	29·84	29·70	64	53			11	24
18	NE	29·90	29·85	67	52			18	
19	N	29·90	29·85	67	46			10	
20	N	30·10	29·96	64	50			16	
		30·40	29·44	83	44			3·18	2·14

NOTES T. F.—*June* 28. Early in the morning *Cumuli* were observed floating at different altitudes: about 11 p. m. a very hard thunder storm came on.

July 1. Rain and lightning continued through the night. 7. *Cirrostratus* in dark spots to NW about sunset. 8. The same, succeeded by storms. 12. The clouds appear mountainous and electric, with rain. 16. Fleecy *Cumuli* beneath *Cirri*. 18. Fine towering and rather windy. 19. Spots of cloud before the moon.

aine dry, notwithstanding the rain.

July 1. About seven o'clock in the evening, the atmosphere began to thicken in the W, at which time there were two very distinct currents, the lower E and SE—the upper W, which soon prevailed. In about an hour after, a vivid flash of lightning—the thunder very distant, followed by heavy rain. Wind tempestuous, lightning very frequent in the night. 6. A *Stratus* on the marshes at night. 11. About half-past 2 p. m. wind E, the western horizon began to darken, soon after which there was a hurricane, the wind blowing in all directions, but most furiously from the W, which finally prevailed: this was immediately succeeded by a storm of thunder, lightning, and heavy rain, which continued about an hour: the evening afterwards was fine. 14. About 2 p. m. a very considerable thunder storm from the W, which continued about half an hour, accompanied with heavy rain, and large hail at intervals: the whole afternoon unsettled, with thunder at a distance, the lightning at first very vivid: at half-past four an uncommonly loud clap of thunder, resembling the report of a cannon: evening fine. 16. Some thunder in the afternoon: a *Water-spout* at Ramsgate, (see note.)

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·40 in.
	Least	29·44 in.
	Mean of the period	29·94 in.
Themometer:	Greatest height	83°
	Least	44°
	Mean of the period	62°
Evaporation (in 20 days)		3·18 in.
Rain (in the same)		2·14 in.

Thunder storms appear to have prevailed extensively. That of the first of the Seventh month did considerable damage at Sheffield: that of the 14th was attended with a number of accidents (detailed in the Papers) in Middlesex, Kent, &c. On the 15th, (if the date be not incorrect) there was a storm at Windsor, in which hailstones as large as common marbles ravaged the gardens, and beat the fruit off the trees.

Ramsgate, July 16.—During a squall of thunder and rain, a stream of water, seven or eight feet in diameter, issued from a very heavy black cloud in the east; which, after taking a horizontal direction towards the south, for about half a mile, suddenly fell into the sea, a very little distance from the shore, with a rushing noise, agitating the water all around in a most extraordinary manner, and rebounding again to the height of several yards.—(Pub. Ledger.)

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7th mo. July 21	NW	30·10	29·96	60°	48°			14	—
22	N	30·20	30·12	67	44			14	—
23	W	30·21	30·21	71	53			17	—
24	SW	30·20	30·10	78	45			21	
25	E	29·94	29·86	77	59			20	—
26	SE	29·86	29·71	71	52			15	41
27	SW	29·68	29·52	68	53			9	13
28	SW	29·65	29·61	66	52			13	69
29	W	30·00	29·94	71	56			16	
30	W.	29·80	29·78	67	52			14	
31	SW	29·86	29·83	70	41			13	31
8th mo. Aug. 1	NW	29·97	29·85	68	45			12	—
2	NW	30·01	29·92	73	57			9	7
3	SW	29·90	29·80	75	56			17	25
4	SE	29·65	29·58	71	54			14	20
5	SW	29·74	29·70	70	50			12	20
6	W	29·82	29·79	72	57			—	—
7	NW	29·70	29·64	72	59			28	41
8	NW	29·92	29·60	64	53			—	—
9	NW	30·04	29·99	65	52			30	33
10	SW	29·82	29·73	70	53			—	—
11	W	29·73	29·67	68	53			53?	18
12	NW	29·90	29·70	68	57			13	14
13	NW	29·88	29·52	66	55			—	
14	W	29·85	29·84	67	57			42	65
15	*NW*	29·49	29·05	68	49			—	—
16	*NW*	29·63	29·48	53	47			14	40
17	*NW*	29·94	29·84	63	40			—	
18	*W*	30·20	30·18	70	49			29	
19	*W*	30·17	30·17	67	47			—	—
20	*NW*	30·28	30·27	69	49			17	
		30·21	29·52	78	40			4·56	4·37

NOTES T. F.—*July* 21. Moon appears bright; and its edges well defined. 23. *Cirri* and *Cirrostrati*. 24. Small meteors, commonly called falling stars, observed. 25. *Cirri* and spongy *Cumuli*. Distant thunder in the evening. 26. *Cirrostrati* prevail—very dark night. 27. High wind in squalls.

August 6. *Cirrostratus* prevails. 9. Fine rows of *Cirrostratus* above
The moon appears hazy and obscure. 10. *Cirri* and *Cir-*
ded high wind in squalls. 11. Windy. Swifts, *Hirun-*
common. 12. Windy and small rain. 13. The

modification of cloud called *Cirrus* prevalent; squalls of wind and flying *Cumuli.* Some heavy black clouds came over about 6 p.m. which threatened rain. 14. Clouded hazy day. At night the moon appeared hazy, and indicated rain, which ensued during the night.

NOTES J. G.—*July* 25. Some showers p.m. 27. Wind extremely high all the afternoon. 28. About 1 p.m. a thunder storm with heavy rain and hail: several other thunder showers in the course of the afternoon. A house was struck. at Ilford: [the electric fluid shivered the door-posts of a room, scorched the floor, and melted the bell-wires.] 31. A very heavy shower with thunder about 5 p.m.

August 3. A rainy night. 5. Thunder p.m. 13. Wind extremely high from the NW. 15. Rainy morning. 16. Wind high and bleak, with small rain most of the day. 18. Foggy morning. 19. Slight showers p.m.

RESULTS.

Winds Westerly.

Barometer:	Greatest height	30·21 in.
	Least	29·52 in.
	Mean (of 25 days)	29·84 in.
Thermometer:	Greatest height	78°
	Least	40°
	Mean of the period	59·98°
Evaporation		4·56 in.
Rain		4·37 in.

Thunder storms appear to have prevailed extensively on and about the fourth of the Eighth month, in the north of England, and in Scotland. I examined the house reported above to have been struck by lightning at Ilford, and obtained a portion of the bell-wire, which had been partially melted. It is observable that where the wire was *double,* it just sufficed to conduct the fluid—while the *single* part was melted into globules, as represented in this figure of the specimen.—L. H.

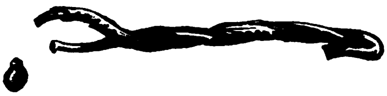


TABLE XLVIII.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 8th mo. Aug. 21	*W*	30·22	30·20	71°	44°				
22	*NW*	30·14	30·05	78	49			38	
23	*NW*	29·99	29·99	80	48				
24	*Var.*	30·12	30·03	83	49			27	
25	*NE*	29·99	29·97	83	58			21	
26	W	30·13	30·03	75	54			11	
27	N	30·17	30·14	73	52				
28	NW	30·21	30·20	73	49			25	
29	E	30·19	30·12	72	55				
30	NW	30·08	30·01	74	59			22	8
31	E	29·96	29·95	82	62			—	
9th mo. Sept. 1	SE	29·96	29·93	83	61			44	
2	E	29·99	29·95	85	63			31	
3	SW	29·90	29·78	68	53			—	—
4	NW	29·95	29·75	61	48			28	44
5	W	30·05	30·05	64	54			—	
6	W	30·27	30·02	67	40			32	
7	E	30·40	30·31	68	38			—	
8	N	30·24	30·16	71	39			26	
9	NE	30·06	30·04	73	51			—	
10	W	30·00	29·96	68	48			28	—
11	SW	29·95	29·70	61	48			—	12
12	N	30·00	29·72	59	41			10	—
13	NW	30·15	30·08	62	48			—	
14	NW	30·38	30·16	69	41			23	
15	NE	30·40	30·37	62	50			—	
16	NE	30·30	30·20	64	57			18	9
17	E	30·14	30·10	72	49			—	
18	NW	30·10	30·10	66	53			14	
19	N	30·16	30·13	61	50			—	
		30·40	29·70	85	38			3·98	0·73

NOTES T. F.—*August* 26. Slight squalls of wind about 10 p. m. 27. Summer lightning during night. 28. *Cirrostratus* disposed in long strata, extending from N to S. 29. Light fleecy *Cumuli;* fog at intervals, very partial. 30. Sky thinly covered with *Cirrostratus* early. Summer lightning and showers at night. 31. Very loud peal of thunder, and hard rain about 3 a. m. *Cirri* and *Cirrocumuli;* at night very vivid lightning, succeeded by hard thunder showers.

mber 1. *Cirri* and *Cirrocumuli:* temperature increasing. 2. *Cirri,*
d (as is usual in hot weather) rises soon after noon, and
ds night. 3. Tufts of *Cirrus* early. Rain set in about
tinued through the night, accompanied by lightning.

6. Windy in the day. 10. *Cirrostratus* and *Cirrocumulus;* the former prevailing. Rain succeeds. 12. Very beautiful sunset. I observed two bars or streaks of *Cirrostratus* of a rich crimson colour, extending from SW to NE on a ground of almost golden hue, at the apparent altitude of about 20°. *Cirrostratus* dispersed in beds of small spots, succeeded by small rain, and warmer air. 14. *Cirrostratus* and *Cirrocumulus.* 19. 20. Calm, heavy, dull weather. Horizon very foggy, and sky overcast.

NOTES J. G.—*August* 21. A *Stratus* at night on the marshes. 22. Foggy morning. 29. The same. 30. Distant thunder and lightning about 11 p. m. 31. About half-past 2 a. m. a tremendous peal of thunder resembling repeated discharges of artillery: it was preceded by extremely vivid lightning; the latter prevailed through the night, and played particularly for a considerable time upon the surface of a barge-load of *coke,* which lay near the laboratory: about 10 p. m. a distant storm again perceptible.

RESULTS.

Winds for the most part Northerly and Easterly.

Barometer:	Greatest height	30·40 in.
	Least	29·70 in.
	Mean of the period	30·08 in.
	The whole for 25 days.	
Thermometer:	Greatest height	85°
	Least	38°
	Mean of the period	60·65°
Evaporation		3·98°
Rain		0·73 in.

TABLE XLIX.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9th mo. Sept. 20	NE	30·04	30·03	63°	55°			—	
21	NE	30·03	29·97	71	55			—	
22	SE	29·97	29·86	71	51			31	
23	Var.	30·03	29·86	63	54			—	
24	NE	30·09	30·03	68	57			—	
25	NE	30·05	30·03	73	53			—	
26	NE	30·03	29·95	71	45			—	
27	NE	29·87	29·85	71	47			59	
28	NE	30·00	29·87	69	44			—	
29	E	30·00	29·93	67	52			—	
30	E	29·98	29·97					—	
10th mo. Oct. 1	E	30·23	29·93	71	43			31	
2	E	30·23	30·22	56	41			—	
3	NE	30·24	30·13	66	41			—	
4	NE	30·13	——	63				22	
5	NE	——	29·85		41			—	
6	Var.	29·92	29·86	62	44			—	
7	SW	29·93	29·90	69	45			19	
8	Var.	29·90	29·88	69	50			—	
9	NE	29·88	29·80	62	54			—	—
10	NE	29·88	29·80	59	48			—	
11	NE	29·88	29·83	61	47			32	
12	N	30·20	——	58				—	
13	N	——	29·80		32			—	
14	NE	30·20	30·15	60	39			—	
15	E	30·15	29·88	58	41			36	
16	SE	29·88	29·65	57	43			—	49
17	S	29·35	29·30	65	55			—	—
18	SW	29·72	29·35	63	46			—	—
19	SW	29·72	29·68	59	56			41	29
		30·24	29·30	71	32			2·71	0·78

NOTES.—Ninth Mo. 20. Grey sky: slight indications of *Cumulus* uniting with *Cirrostratus*. 21. A *Stratus* this night and the last. 22. Mostly clear a. m. then various clouds ending in *Nimbus*. 23. *Nimbus* to the S: a shower. 24. A very lively pink tinge in the W at sunset, and a fainter red in the E: the wind sprung up fresh, and the night was cloudy, with a faint flash or two of distant lightning. 25. A fine day. 26, 27. Clear: *Stratus* at night. 28. The same: about 7 p. m. a bright blue meteor descended obliquely in the E. 29. Cloudy: some appearance of an active electricity. 30. Rain early, after which fair.

Tenth Mo. 7. The nocturnal *Stratus* has prevailed (with gossamer) since the beginning of the month. 8. In the course of this day, the wind, which was first N with mist, went slowly by S to E, when distant *Nimbi* appeared: and after sunset a swift *scud* came from that quarter. 9. About 7 a. m. a slight shower or two. 10, 11, 12. Brisk winds: *Cirri:* lunar halo. 13. Hoar Frost. 14, 15. Windy: *Cirri.* 16. a. m. wind E, *Cirrocumulus* passing to *Cirrostratus,* in bars from N to S, nearly crossing the visible hemisphere: in the latter quarter a haze tinged purplish by the sun. The wind shifted for a while to S, and there was rain at intervals p. m. 17. Rain. 18, 19. Much wind.

NOTES T. F.—*September* 22. A great disturbance of the electric state of the atmosphere was conspicuous. A fog covered the ground at sunrise; about noon I observed *Cirri* spread about at a great altitude: these were succeeded by *Cirrostrati, Cirrocumuli,* and *Cumuli* of various appearances; some large and towering, others loose dark coloured fleeces, floating in a lower region. Towards evening the wind rose, and the barometer fell; but the night turned out calm and clear, and summer lightning prevailed. 23. Several modifications of cloud. Clear night, and summer lightning. 25. Overcast at sunrise; very clear day afterwards; falling stars. 26. Clear day, and rather windy in the middle; calm clear night. Small meteors. 27. *Cirrostratus* during the day, disposed in beds of small aggregates, extending in arcs across the zenith. Clear night; small meteors frequent. 29. Foggy at sunrise. After it cleared off, *Cirrostratus* dispersed about in the atmosphere; in some places in thin films, in others in rows of small spots. *Cirrocumulus* also appeared. Loose flocks of dark reddish *Cumulus* in a lower region. At sunset a very highly coloured *Cirrostratus,* on an almost golden sky, gave the west horizon a very beautiful appearance. Rain came on during the night. 30. The western sky appeared deep red after sunset.

October 1. At night the stars' light suddenly diminished, and a lucid bur (not a halo) was observed round Jupiter. 2. Electric state of the atmosphere very much disturbed; various modifications of cloud. A breeze rose from E at 10 a. m. Clouds highly coloured at sunset. 3. Clear day; only *Cumuli* passed over with the wind. 6. *Cirrocumuli;* heat increasing. 12. Swallows and martins last seen. 16. A total change in the weather took place to-day. An intervening current from the south, and the prevalence of *Cirrus* and *Cirrostratus,* indicated rain, which came on during the evening. 17—20. During this period, the weather was warm, accompanied by rain and high wind at intervals. *Cirrocumulus* and *Cirrostratus* prevailed between the showers.

RESULTS.

Prevailing Winds NE and E nearly to the close of the period.

Barometer:	Greatest height . . .	30·24 in.
	Least	29·30 in.
	Mean of the period . . .	29.91 in.
Thermometer:	Greatest height . . .	71°
	Least	32°
	Mean of the period . . .	56°
Evaporation	. . . . . .	2.71 in.
Rain	. . . . . .	0·78 in.

TABLE L.

1810.	Wind.	Pressure.		Temp.		T. No 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 10th mo. Oct. 20	SW	29·68	29·60	64°	49°			—	91
21	SW	29·60	29·30	62	56			—	30
22	SW	29·59	29·30	60	48			53	
23	NW	29·73	29·50	57	43			—	
24	N	30·16	29·73	58	36			—	
25	N	30·35	30·16	52	33			32	
26	NE	30·35	30·21	52	44			—	
27	Var.	30·21	29·68	—	—			—	—
28	Var.	29·68	29·54	54	31			14	92
29	NW	29·85	29·60	45	30			—	—
30	NW	30·01	29·85	45	27			—	
31	W	29·85	29·71	46	35			19	27
11th mo. Nov. 1	NE	29·74	29·68	53	37			—	—
2	NE	29·95	29·93	48	46			—	—
3	NE	——	——	47	43			—	30
4	NE	29·93	29·68	46	31			18	—
5	SW	29·68	29·17	45	35			—	—
6	Var.	29·17	28·98	47	33			—	—
7	Var.	——	——	—	—			—	39
8	Var.	29·43	28·98	49	32			12	
9	NE	29·43	28·60	53	38			—	—
10	NE	29·18	28·50	50	43			—	10
11	*W*	——	——	46	43			—	
12	*NE*	——	——	48	31			—	6
13	*NE*	30·15	28·50	48	30			—	
14	SE	30·15	29·54	54	36			—	
15	SW	29·54	29·27	58	53			—	1·25
16	SW	29·30	29·20	58	49			—	
17	SW	29·46	29·20	54	45			10	35
18	SW	29·25	29·17	51	45				
		30·35	28·50	64	27			1·58	4·85

NOTES.—Tenth Mo. 20. Windy: much drizzling rain. 21. Windy: small rain: stormy night. 22. Much wind p. m. cloudy stormy night. 23. Windy cloudy. 24. Hoar frost *Cumulus,* with the superior clouds, ending in *Nimbus:* some appearance of lightning, with a small meteor. 25. Hoar frost *Cumulus* ending in *Nimbus* meteors. 26. No dew: cloudy. 28. Rain from before sunrise to near sunset. 29. *Cirrus:* snow in the night: brisk wind. 31. Rain at intervals.

Eleventh Mo. 1—8. Cloudy, windy: wet at intervals. 9. A shower mixed with hail about noon. Lofty piles of *Cumulus* and *Cumulostratus,* p. m., the moon first very pale, then faintly obscured by elevated *Cirri* and haze, with a faint halo of the largest diameter. At 9 p.m. the barometer, which had risen to 29·43 began to fall with a strong gale from the eastward and abundance of rain. 10. At noon the rain abated: the wind going by S to SW, but presently returning to NE. 11. a.m. Cloudy: no dew: NW. 12, 13. Hoar frost: cloudy: windy: misty at night. 14. Very wet night. 15. Maximum of temperature at 9, with the wind SW: stormy wet night. 16. Windy: some heavy showers early.

NOTES T. F.—*October* 21. The weather has been much damper ever since the 16th, so as to render the *glass stands* of a peculiar sort of electrical instrument of no use, by making them serve as *conductors*. 22. High wind all day. 29. Stars hazy; very cold air.

November 9. Wind rose during the night, and became very high. 10. High wind all day. A small coloured corona or burr observed round the moon about 10 p.m. 14. Before sunrise I observed the clouds towards the east very highly coloured with red and deep crimson. 15. Much rain fell during the night. 16. Very windy, showery night. 17. Flash of lightning about half-past 6 p.m.

RESULTS.

Winds Northerly in the middle, SW at the beginning and end of the period.

Barometer:	Greatest height	30·35 in.
	Least	28·50 in.
	Mean of the period	29·59 in.
Thermometer:	Greatest height	64°
	Least	27°
	Mean of the period	45·48°
Evaporation		1·85 in.
Rain		4·85 in.

TABLE LI.

1810.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 11th mo. Nov. 19	SW	29·70	29·61	53°	42°			—	
20	NW	29·71	29·58	52	43			—	34
21	SE	29·58	29·48	57	45			—	—
22	Var.	29·85	29·58	52	43			21	1·16
23	SE	29·86	29·83	54	45			—	—
24	E	29·79	29·68	53	39			—	38
25	SE	29·64	29·56	48	36			—	—
26	Var.	29·39	29·19	47	37			—	63
27	E	29·22	29·09	46	39			—	—
28	W	29·08	28·94	47	35			—	—
29	SE	29·13	29·04	43	34			14	36
30	W	29·42	29·19	40	29			—	
12th mo. Dec. 1	S	29·70	29·47	37	30			8	
2	SW	30·02	29·89	35	25			—	
3	SE	29·95	29·95	43	31			—	—
4	W	29·96	29·92	49	38			—	—
5	W	29·95	29·89	50	45			—	—
6	S	29·63	29·42	52	41			14	42
7	SW	29·42	29·36	46	34			—	
8	W	29·79	29·54	39	26			—	—
9	NW	29·94	29·89	36	26			—	
10	SE	29·60	29·38	38	34			—	74
11	NW	29·90	29·56	36	28			—	
12	NW	29·76	29·60	49	40			—	—
13	W	29·93	29·80	51	49			32	—
14	W	29·78	29·66	52	38			—	98
15	NW	30·06	29·88	45	36			—	
16	Var.	30·25		42	30			—	
17	SW	30·10	29·94	49	42			—	—
18	Var.	29·65	29·45	50	38			19	53
		30·25	28·94	57	25			1·08	5·54

NOTES T. F.—*November* 20. The maximum of thermometer at 11 p. m. Thunder clouds about. 22. Showers of hail and rain: lightning at night. 23. Flash of lightning at night. 30. Moon well defined; but yellowish. Flashes of lightning observed.

December 2. *Cirri, Cirrostrati,* and *Cirrocumuli,* early; succeeded by change of weather. 4. Very damp. 5. *Cirrostratus* and *Cirrocumulus.* Windy night. 9. Sky overspread with *Cirrocumulus,* p. m. 10. Upper current NNE to-night. 11. A burr round the moon, about half-past 10 p. m. a little coloured with yellow, red, and green, at its extremities. *Cirrostratus* and *Cirrocumulus* in the afternoon: rain came on at night, accompanied by high wind, and increasing temperature. 14. Very windy showery day; but clear night. 15. Early a.m. *Cirrostratus* was spread about the sky, and threatened rain. It however cleared: and at night light tufts of *Cirrus*, approximating to *Cirrostratus*, scattered about, presented a very curious sky by moonlight. 16. *Cirrostratus* disposed in beds, p. m. 17. *Cirrocumulus* in the intervals of the fog a. m.; *Cirrostratus* p. m. 18. A burr round Jupiter.

NOTES J. G.—*November* 22. Rainy morning—a heavy shower of hail about 1 p.m.—afternoon extremely stormy, with hail. 23. An *ignis fatuus* observed in the marshes in the evening, which continued for a considerable time. 26th. Several *ignes fatui* seen in different parts of the marshes at night—some of them extremely bright. 27, 28. The *ignis fatuus* again seen in the evening—the following day the marshes were flooded from an overflow of the river, since which time they have not been observed.

December 3. White frost. 4. Very foggy morning. 5. Foggy morning. 6. Rainy morning. 9. White frost. 10. Very rainy morning—some snow mixed with rain. 14. Night very stormy, with heavy rain. 16. Evening very foggy. 18. Stormy day.

RESULTS.

Winds Variable: Easterly rather predominated in the former, Westerly in the latter part of the period.

Barometer:	Greatest height . . .	30·25 in.
	Least	28·94 in.
	Mean of the period . .	29·66 in.
Thermometer:	Greatest height . . .	57°
	Least	25°
	Mean of the period . .	41·15°
Evaporation	. . . .	1·08 in.
Rain	. . . .	5·54 in.

TABLE LII.

1810.		Wind.	Pressure.		Temp.		T. No.2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 12th mo. Dec.	19	NW	29·84	29·50	42°	34°			—	
	20	SW	29·81	29·38	50	39			—	—
	21	W	29·38	29·33	44	41			28	28
	22	W	29·68	29·62	52	41			—	—
	23	SW	29·43	29·38	52	40			—	80
	24	NE	29·46	29·26	51	40			—	76
	25	W	29·03	29·98	49	40			31	32
	26	NW	29·77	29·51	52	43			—	
	27	NW	29·58	29·54	46	38			—	—
	28	NW	30·30	30·20	37	31			—	19
	29	NW	30·50	30·36	34	27			—	
	30	NW	30·50	30·50	34	25			—	
	31	N	30·51	30·35	32	27			40	
1811, 1st mo. Jan.	1	NE	30·28	30·15	28	24				—
	2	NE	30·05	29·85	28	23				—
	3	Var.	29·76	29·71	28	18				—
	4	E	29·95	29·91	31	24				
	5	NE	29·89	29·83	28	25				
	6	NE	29·94	29·84	28	23				
	7	NE	29·94	29·90	29	24				
	8	NE	29·86	29·82	29	20				
	9	NE	29·94	29·86	30	20				—
	10	E	29·97	29·94	42	20				—
	11	S	29·82	29·74	44	35			—	36
	12	S	29·68	29·49	48	35			—	—
	13	SW	29·70	29·66	46	39			—	36
	14	Var.	29·70	29·66	50	43			12	—
	15	W	29·60	29·62	45	32			—	12
	16	W	30·06	29·88	46	33			—	
			30·51	29·33	52	18				3·19

Notes T. F.—*December* 20. Hard squalls of wind during the night. 21. Very high wind, particularly at night. 25. High wind accompanied by flashes of lightning all night. 26. The marshes along the Lea flooded.

1811. *January* 4. Very high wind. 5. Dark fleeces of *Cumulus* seen floating beneath *Cirri,* which were in a calm region above. 12. The doors of the house swelled with damp. 16. *Cirrostratus* and *Cirrocumulus.*

Notes J. G.—*December* 21. Rainy morning. 22. Wind very high all night. 24. Very windy night, with heavy rain. 25. Wind high all day, with rain; frequent lightning in the evening from SE. 26. Wind very boisterous early in the morning—day fine: the rain of the last three or four days being impeded in its passage to the Thames by the spring tides, overflowed the banks, and filled the marshes. 27. Rainy morning—wind blowing strong from the NW. 28. Some snow in the afternoon. 29. A little snow in the afternoon. 30. Clear, frosty morning—some snow in the evening. 31. Ground covered with snow in the morning.

1811. *January* 1. Snow to the depth of about two inches fell in the course of the day. 2. Snow at intervals during the day. 3. Snowy morning—wind S. Thermometer 24° at 9 a. m. 4. Wind very bleak and high during the day; continued all the night of the 4th to blow furiously from the E and NE. 5. Wind very high all day. 6. Day very fine; wind abated; moon extremely bright in the evening. 7. Wind again very boisterous in the morning; evening cloudy. 9. Snowy morning; some appearances of a thaw in the afternoon; evening cloudy. 10. Hoar frost, very thick fog; thermometer 20° at 9 a. m.: the trees had a most beautiful appearance from the frost, till the afternoon, when the wind shifted to the SE and S, and a thaw commenced, accelerated by a gentle rain in the evening. 11. Rainy morning; thermometer 42° at 9 a. m. The evaporation since the beginning of the month has been very considerable, most of the snow having disappeared during the continuance of the frost; an accident to the gauge prevented its being measured.

RESULTS.

Winds for the most part Northerly.

Barometer:	Greatest height	30·51 in.
	Least	29·33 in.
	Mean (some of the lower observations wanting)	29·88 in.
Thermometer:	Greatest height	52°
	Least	18°
	Mean of the period	35·86°
Evaporation to the end of the year		0·99 in.
The remainder of the period imperfect.		
Rain		3·19 in.

Comparison of the Winds and Weather, during the foregoing Periods, with the same in the Island of Iceland.

A Register of the Weather kept at Reikiavik in Iceland, and published in Sir Geo. Mackenzie's Travels, offers the following interesting points of comparison with the weather in Britain, during the fore part of this winter.

1810.	AT STRATFORD.	AT REIKIAVIK.
Dec. 6	Wind S: showery.	Wind NE: a gale.
10	——— SE: rainy.	——— NE: clear.
14	——— W: much rain.	——— NE: clear.
18	——— Var: rainy.	——— NE: rained a little, and froze again.
20	——— SW: rainy.	Heavy snow.
23—27	——— W and NW chiefly: but once NE, about two inches of rain in the first three days.	——— NE: all fine days.
29—31	——— NW and N: fine days, with a little snow.	——— SE: a gale the whole time, with much rain.
1811.		
Jan. 1—3	——— NE: very cold and snowy.	Southerly gales, with rain.
8—10	Weather as above.	Weather as above.
11—18	Weather the reverse of the above.	Weather the reverse of the above.

From a third Register, kept at the intermediate distance of 180 miles from Stratford, and on the opposite side of our Island, viz. that of Thos. Hanson, at Manchester, it may now be shown that the contrast of Stratford with Reikiavik, was not the result of local causes.

At *Manchester*, Dec. 6. Wind S: rainy. 10. E: snow (here the intermediate station has an intermediate current.) 14. S. boisterous with rain. 18. S: fine. 20. S: rainy. 23—28. SW chiefly: about an inch of rain. 29—31. N: fair. 1811. Jan. 1—8. N, NE, and E, with snow. 9, 10. SE: clear and variable. 11—18. Westerly gales, with about an inch of rain.

Thus it appears, that on many days in the course of the first six weeks of the winter of 1810—11, the greater part of Britain was subject to a current proceeding in an opposite direction to that which [illegible] n Iceland: and this obtained whether the Winds were [illegible] Southerly. That it should snow and freeze in Iceland, [illegible] ld weather about London, seems perfectly natural:

but it has probably never been suspected that *our* periods of frost are contemporaneous with *their* intervals of rain and thaw.

This subject is certainly deserving of a more particular investigation, but the paucity of observations with instruments in Iceland, presents a great obstacle: yet a good comparison may be formed on the general reports of such as visit that island in trading vessels.

EARTHQUAKES IN ITALY.

"At Parma, in the night between the 24th and 25th Dec. (1810,) there was a very severe shock of an earthquake. Several persons, who came from the midnight mass, were thrown down in the streets. In Genois-street, all the chimnies tumbled down, and several houses sustained considerable damage."

"The earthquake seems to have extended quite across Italy.—An article, dated Verona, December 25, says:—'We yesterday experienced here the shock of an earthquake, the heaviest I ever witnessed. It lasted ten seconds, and its direction was from N to S. Some few persons were hurt, but no lives were lost.'—Another from Genoa, of the 26th says:—'At one o'clock in the afternoon, we felt here a violent shock of an earthquake, in the direction from E to W. It lasted from eight to ten seconds, set the bells a ringing, and produced much confusion amongst the furniture of the inhabitants. Three old houses tumbled down. No further mischief was done either here or in the neighbourhood."

WINTER THUNDER STORMS.

"The phenomenon of a thunder storm on Christmas day, (1810,) was not confined to this country, but was experienced in several places in Germany, and followed by so dreadful a gale of wind, that many houses were blown down, and the heavy laden waggons on the public roads overturned."

WINTER IN SIBERIA.

"Letters from various districts in Siberia, dated in October last, mention that the winter has commenced unusually early in that country. The cold set in in the middle of September, and the snow fell in such quantities, as to prevent the harvest, which was very abundant, from being entirely got in."—(PAPERS.)

TABLE LIII.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1st mo. Jan. 17	NW	29·82	29·75	51°	39°			30	
18	W	29·96	29·80	40	32			—	
19	NW	30·48	30·40	41	27			—	
20	SE	30·41	30·15	40	30			—	
21	SW	30·15	30·10	38	31			—	
22	NW	30·20	30·20	36	31			12	
23	SE	30·31	30·30	40	33			—	
24	N	30·50	30·47	39	31			—	
25	Var.	30·54	30·51	37	27			—	
26	W	30·36	30·08	42	31			8	6
27	NW	29·64	29·60	40	25			—	
28	NW	29·65	29·63	31	19			—	
29	NW	29·76	29·63	27	14			—	
30	N	29·78	29·55	34	21			—	
31	E	29·18	29·08	45	34			13	31
2d mo. Feb. 1	S	29·43	29·29	46	35			—	—
2	E	29·68	29·55	46	38			—	
3	S	29·90	29·60	49	29			—	
4	SE	30·13	30·10	48	30			—	
5	E	30·05	29·72	46	35			—	
6	S	29·65	29·52	51	45			—	
7	SW	29·82	29·60	52	39			45	18
8	SW	29·74	29·58	49	40			—	—
9	N	29·78	29·62	47	41			—	—
10	S	29·85	29·70	52	48			—	—
11	SW	29·55	29·37	52	45			34	47
12	SW	29·34	29·30	49	35			—	—
13	SW	29·34	29·25	40	35			16	44
14	NW	29·68	29·21	42	35			—	
15	E	29·80	29·15	42	36			—	—
		30·54	29·08	52	14			1·58	1·46

NOTES T. F.—*January* 20. *Cirri* and *Cirrostrati* observed. 26. Cold increasing, although the wind was SW; a white frost. 27. I observed an arc of *Cirrostratus* to extend across the zenith in the direction of the wind. Snow fell during the night.

February 2. About 9 p. m. I observed a lunar halo. I took the diameter of its area with a quadrant, which was about 40°. 3. Showery morning; towards evening I observed red coloured *Cirrostrati* in an apparently calm region; while fleecy *Cumuli* floated beneath them in the wind. The *Cirrostrati* reflected a fine red tint, while the *Cumuli*, passing under, and making the same angle with the sun, appeared blackish. 4. White frost, succeeded by thaw. About 8 p. m. a lunar halo of about 40° diameter appeared for a few minutes during the passage of a *Cirrostratus* before the moon. 5. Sky variously spotted, streaked and freckled with *Cirrostratus* in the morning, and with *Cirrocumulus* at night. 6. Temperature much increased. In the evening I observed a double lunar corona; that is, a small one within a larger one. I have observed that coronæ as well as halones are generally prognostics of approaching rain, &c. 7. *Cirrus, Cirrostratus*, and *Cirrocumulus* preceded showers of rain and hail. 8. Sky highly coloured at sunrise; at night I observed, by the motion of the clouds, that there were two currents of air. 10. Frogs observed about. Thrush sings. 13. Hard shower of hail about noon.

NOTES J. G.—*January* 20. White frost. 28. A little snow in the morning. 29, 30. White frost. Thermometer 13° at Plaistow.—Wind very boisterous in the evening; a considerable quantity of snow (about three inches) fell during the night; wind E, blowing very strong. 31. Rainy morning: barometer falling, evening stormy.

RESULTS.

Winds Variable.

Barometer:	Greatest height . . .	30·54 in.
	Least	29·08 in.
	Mean of the period . .	29·80 in.
Thermometer:	Greatest height . . .	52°
	Least	14°
	Mean of the period . .	38·05°
Evaporation	. . . .	1·58 in.
	Rain	1·46 in.

METEOR.—"On the night of the 26th of January, a large globe of fire, of a very deep red, was seen to pass through the air, at Wasserbourg, a small town of Bavaria, ten leagues from Munich; it descended gently, and fell into the Inn without explosion." Supposing the appearance in question to have been a large elevated *Meteor*, this apparent fall into the *river* was probably a deception of sight: [but it may have been a *Montgolfier*.]—L. H.

SUBMARINE VOLCANO.

St. Michael's, Azores, Feb. 17.—"On the 26th, 27th, and 28th of January this island again experienced several very severe shocks of an earthquake. On the 31st, a tremendous explosion of smoke and flames issued from the water, at the distance of half a league, or two English miles from the shore, to the W of our island. The scene was awful beyond all description, and from the bowels of the inflamed substance, upwards of eighty fathoms deep in the ocean, issued smoke, fire, cinders, ashes and stones, of an immense size. Quantities of different kinds of fish floated on the surface of the sea towards the shore. This dreadful eruption of fire has perhaps been the saving of the island and its inhabitants."—(PAPERS.)

TABLE LIV.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2d mo. Feb. 16	NW	29·95	29·36	40°	25°			—	18
17	NW	30·20	30·18	38	29			47	
18	SE	30·14	30·05	45	31			—	
19	E	29·99	29·82	41	30			—	
20	E	29·74	29·70	40	34			—	
21	E	29·51	29·27	51	39			15	
22	S	29·18	29·09	54	35			—	
23	SE	29·25	29·25	54	41			16	24
24	SE	29·18	29·04	51	37			—	—
25	SW	29·40	29·14	49	38			—	18
26	W	29·30	29·25	55	42			—	
27	W	29 65	29·50	49	40			42	—
28	S	29·78	29·50	52	40			9	8
3d mo. March 1	W	29·78	29·58	47	38			—	—
2	W	29·80	29·80	52	46			26	5
3	W	30·00	30·00	54	42			—	
4	W	30·02	30·00	55	46			—	
5	S	29·80	29·35	55	42			—	—
6	W	29·63	29·46	52	48			46	33
7	W	29·39	29·30	57	48			—	—
8	S	29·78	29·33	58	34			—	52
9	NW	30·46	30·20	45	34			35	
10	W	30·52	30·47	53	40			—	
11	Var.	30·48	30·46	56	41			—	
12	SE	30·46	30·42	53	38			—	
13	NE	30·40	30·34	52	39			27	
14	NE	30·38	30·34	49	36			—	
15	E	30·39	30·35	48	29			—	
16	E	30·31	30·25	54	27			30	
		30·52	29·04	58	25			2·93	1·58

Notes T. F.—*February* 17. This afternoon appeared *Cirrostratus* of various figures, *Cirrocumulus* and fleeces of *Cumulus*. 18. Various modifications of cloud again to day. 24. Gentle showers with clear intervals. 25. The moon appeared of a deep brazen colour. 28. A lunar corona succeeded by showers.

March 1. *Cirrostratus* as usual prevailed between the showers. 3. *Cirrostratus* and *Cumulus* prevail. A lunar corona round the moon
ening, and sometimes a halo. 4, 5. A few *Cirri* and *Cirro-*
dy. 6. I observed *Cirrus*, approximating to *Cirrostratus*,
faint whitish transverse bars, and forming a kind of

net work in the zenith: a windy night. 8 The wind got to the NE, and was high at night. 10. Fleeces of *Cumulus* richly coloured by the rising sun. 13. Clear morning: as the day advanced I observed *Cirri* of various shapes ramifying in all directions, *Cirrostrati*, and *Cirrocumuli*. In a lower region *Cumuli* floated along in the wind. The general appearance of the clouds to-day indicated a great disturbance of the electric state of the atmosphere: a very similar kind of weather prevailed during last September, and a curious circumstance which then took place, happened again on the return to day of the same kind of weather; namely, the irregular pulsation of the electric bells of De Luc's column. 14. Only *Cumuli* passed over with the wind. The electric bells of De Luc's column pulsate very irregularly. 15. Clear night, falling stars seen.

NOTES J. G.—*March* 1. About a quarter past 2 p. m. a *Nimbus* passed over, discharging rain; after which a rainbow appeared, the colours of the complementary bow extremely distinct. 2. Wind very high all night. 3. A large halo round the moon in the evening. 6. A shower of hail about noon—evening rainy—wind high. 7. Wind high in the morning—afternoon very showery—evening and night stormy. 8. Rainy morning. 12. Foggy morning.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·52 in.
	Least	29·04 in.
	Mean of the period	29·82 in.
Thermometer:	Greatest height	58°
	Least	25°
	Mean of the period	43·93°
Evaporation		2·93 in.
Rain		1·58 in.

TABLE LV.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3d mo. March 17	Var.	30·17	30·17	61°	26°			11	
18	Var.	30·15	30·15	62	35			—	
19	W	30·23	30·20	55	42			—	
20	W	30·15	30·07	57	49			—	
21	SW	30·05	30·05	60	45			31	6
22	NE	30·38	30·13	50	29			—	
23	NW	30·50	30·48	56	30			—	
24	E	30·40	30·28	54	36			20	
25	E	30·21	30·11	53	32			—	
26	NE	30·24	30·10	56	31			18	
27	NE	30·45	30·23	57	26			—	
28	Var.	30·60	30·48	62	36			—	
29	NE	30·61	30·55	61	31			—	
30	*NE*	30·34	30·23	62	37			38	
31	NE	30·22	30·16	50	43			3	
4th mo. April 1	E	30·10	30·00	55	34			—	
2	Var.	29·98	29·90	64	43			—	
3	W	30·04	29·98	62	39			25	
4	*N*	30·15	30·09	63	41			—	
5	NE	30·18	30·04	57	28			—	
6	N	29·91	29·71	61	33			—	
7	NW	29·55	29·52	40	31			30	6
8	NE	29·62	29·59	46	28			—	
9	N	29·79	29·67	46	26			—	
10	Var.	29·90	29·85	54	37			—	—
11	Var.	30·22	30·03	51	32			38	
12	Var.	30·23	30·12	55	46			—	35
13	SW	30·15	30·00	65	54			—	—
14	W	30·20	30·12	65	51			33	15
15	*NW*	30·15	30·12	61	52			—	—
		30·61	29·52	65	26			2·47	0·62

NOTES T. F.—*March* 18. This evening *Cirri*, becoming *Cirrostrati*, observed. De Luc's electric bells quite silent. 19. *Cirrocumulus* and gentle showers. Electric bells ring weak, but regularly. 20—22. During this period mild winds and damper air prevailed. Electric bells pulsated pretty regularly: on the evening of the 22d fleecy evanescent *Cumuli* indicated clear weather. The electric bells became silent at night. 23. Cloudy; fine purple and yellow-coloured sunset. Bells silent. 24. Very clear: only faint streaks of the *Linear Cirrus*. 25. Early I observed *Cirrus*, ramifying about in all directions, and becoming *Cirrostratus* and *Cirrocumulus:* fleecy *Cumuli* floated in the wind beneath them. Bells silent. 27. *Cirrus* prevailed this evening, and became *Cirrostratus,* coloured by the setting sun. Bells begin to ring again. 28, 29. *Cirrus* and *Cirrostratus.* Bells ringing irregularly or at intervals.

April 1. A meteor seen to SW about 9 p. m. 2, 3. *Cirrostratus* and *Cirrocumulus* alternately prevail. 4. This afternoon fleecy, rocky, and mountainous *Cumuli;* in a higher region *Cirrostratus* and *Cirrocumulus* in different places, the latter most abundant during the day, but the former ultimately prevailed, and at night exhibited a lunar halo, of the usual diameter, *i. e.* between 40° and 50°. From the 24th March the electric bells rang irregularly till about the 14th April, when they rang regularly and loud till the 18th; when they ceased, and have not rung since.

NOTES J. G.—*March* 16—18. White frost. 20. Evening much clouded—wind high. 21. A little rain early in the morning. 23. White frost. 30. Morning foggy. 31. Very cloudy day.

April 6. White frost and foggy. 7. Some gentle rain and some snow in the morning, day very cloudy and cold. 14—16. Some gentle refreshing showers.

RESULTS.

Winds Variable, but chiefly Northerly.

Barometer:	Greatest height . . .	30·61 in.
	Least	29·52 in.
	Mean of the period . .	30·12 in.
Thermometer:	Greatest height . . .	65°
	Least	26°
	Mean of the period . . .	46·75°
Evaporation	. . . . . .	2·47 in.
Rain	. . . .	0·62 in.

FRANCE. *Hail Storm.*—The departments of Agin, and the Upper Marne, in France, were, at the beginning of April, visited by a dreadful hail storm, *which killed many persons,* as well as cattle, destroyed the vines, and did much mischief besides. Many of the hail stones were five inches long, and two inches diameter, and weighed six ounces. The storm was succeeded by a frost, which lasted two days. [This may render credible what we read, of thousands of men and horses being killed by hailstones, on a march.—See *Trusler's Vade-mecum,* vol. ii. p. 32.—Compare Psalm lxxviii. 47, 48; and Joshua x. 11.]

IRELAND. *Meteor.*—April 5, at ten o'clock at night, a large and most brilliant meteor passed in a northerly direction over the eastern extremity of Belfast. It was of a most beautiful and vivid white, and appeared to expand itself considerably as it passed, with an undulatory motion.—(PAPERS.)

TABLE LVI.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 4th mo. April 16	Var.	30·00	29·83	62°	41°			—	17
17	*NW*	29·63	29·28	61	45			18	
18	SE	29·34	29·22	62	34			—	—
19	E	29·29	29·28	62	48			—	9
20	*S*	29·34	29·33	65	52			35	12
21	S	29·68	29·59	68	48			—	
22	E	29·68	29·60	69	52			—	—
23	SE	29·76	29·62	77	48			47	
24	NW	29·87	29·80	75	52			—	
25	Var.	29·85	29·80	66	49			—	
26	NW	29·78	29·66	69	40			36	
27	NE	29·64	29·62	66	39			—	
28	Var.	29·65	29·55	68	51			—	
29	SW	29·71	29·67	58	46			—	—
30	SW	29·81	29·78	61	48			52	5
5th mo. May 1	S	29·68	29·65	64	54			—	11
2	SW	29·98	29·66	61	46			23	—
3	SW	30·05	29·91	64	54			—	22
4	SW	29·94	29·91	67	55			—	—
5	SW	29·95	29·73	62	40			39	18
6	E	30·08	29·93	58	46			—	31
7	Var.	29·83	29·72	56	46			—	10
8	Var.	29·85	29·72	63	51			—	—
9	S	29·58	29·52	62	46			22	40
10	Var.	29·78	29·75	69	51			—	—
11	SW	29·85	29·84	74	50			—	
12	Var.	29·78	29·66	82	56			40	4
13	E	29·59	29·52	83	60			—	
14	S	29·74	29·51	72	43			30	
		30·05	29·22	83	34			3·42	1·79

NOTES T. F.—*April* 17. Only *Cumulus* observed. 18. *Nimbi* pouring hail and rain. 19. *Cirrus* appeared early, followed by *Cirrostratus, Cirrocumulus* and *Cumulus,* and eventually by *Nimbus* and showers. [Blowed hard in the night.—*Ph. Tr.*] The cuckoo and swallow first seen. A lucid meteor observed about 3 p. m. 22—25. *Cirrus, Cirrostratus, Cirrocumulus, Cumulus, and Cumulostratus* of various figures continually prevail, with summer lightning and dry air. 26, 27. Same kind of clouds with showers. 28. The multiform appearances of the *Cirrostratus,* p. m. exhibited a beautiful sky; in some places it was finely *undulated,* then became *reticular,* and lastly *confused* *vapour.* *Cirrocumulus* and *Cumulus* also seen: showers late in the evening. 29, 30. *Nimbi* (with cirrose fibres extending from them) pouring down showers.

May 1. Continued showers through the day. 2. 3. Showers with clear intervals. 4. Only *Cumuli* to-day. 6—8. Showery at times. 9. Rainy. 11. *Cirrostratus* coloured by setting sun. 12—14. *Cirrus,* &c. Sky deep blue in the eastern horizon. On the 13th only *Cumuli*; 14th. *Cirri* and *Cumuli.* 15. Only *Cumuli* in forenoon. Towards evening *Cirrus, Cirrostratus,* and *Cirrocumulus,* in different altitudes, exhibited very various tints and unusual appearances; which ended in rain. The electric bells of De Luc's column were silent till the 7th May, when they began to ring, and have continued ringing, more or less regularly, till the present time.

NOTES J. G.—*April* 18. Showers and sunshine—in the twilight of the evening a brilliant meteor descended in the E, of the apparent magnitude of Venus—there were heavy clouds in the NE horizon at sunset, with much haze above them. 19. *Cirrus, Cumulus,* and *Cirrostratus* clouds, with a strong easterly breeze. 20. *The first swallow* made its appearance this forenoon. 21. Some lightning in the evening. 22. Some distant thunder heard this morning—much lightning in the NW at night. 23. Some rain about 5 a. m.—the cuckoo heard this morning. 24. Foggy morning. 29. Wind high from the SW in the morning, with showers—afternoon, wind increased, with rain mixed with hail—some thunder at a distance.

May 1. Gentle showers during the day. 2. Showery day. 3. Very cloudy, with showers. 5. Wind very high from the SW all day, with showers—generally clouded. 6. Morning very fine, wind gone down, changed in the course of the last night to the eastward; afternoon very cloudy, with showers;—night rainy, wind high. 9. Rainy morning; continued to rain till towards evening, which was fine—some distant thunder in the afternoon. 10. Showery and fine; towards evening a rainbow, and some distant thunder. 13. Some lightning in the evening.

RESULTS.

Wind variable, but mostly Southerly.

Barometer:	Greatest height . . .	30·05 in.
	Least	29·22 in.
	Mean of the period . .	29·70 in.
Thermometer:	Greatest height . . .	83°
	Least	34°
	Mean of the period . .	57·19°
Evaporation		3·42 in.
Rain		1·79 in.

TABLE LVII.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 5th mo. May. 15	SE	29·82	29·81	72°	55°			14	—
16	E	29·90	29·82	70	39			—	
17	NE	29·92	29·90	77	48			—	
18	NE	29·94	29·89	76	57			—	
19	NE	30·00	29·98	61	51			35	51
20	NE	29·94	29·82	74	51			—	30
21	SE	29·75	29·72	70	55			—	—
22	E	29·75	29·69	76	54			28	
23	NW	29·95	29·81	72	50			—	
24	SE	29·95	29·93	73	57			—	
25	W	30·10	30·01	81	54			52	
26	E	30·05	30·04	84	56			—	
27	Var.	30·00	29·78	80	61			—	—
28	SW	29·80	29·68	70	60			—	—
29	SW	29·97	29·72	62	48			66	14
30	W	30·00	29·81	77	56			—	14
31	SE	29·62	29·48	75	52			26	7
6th mo. June 1	Var.	29·72		79	53			—	
2	NE	29·54	29·49	67	51			25	49
3	W	29·98	29·70	64	50			—	
4	SW	29·90	29·85	71	59			—	—
5	S	29·79	29·68	67	53			53	27
6	SW	29·89	29·81	75	53			—	
7	S	30·05	29·99	80	53			—	
8	Var.	29·96	29·85	88	53			56	—
9	W	30·24	30·22	74	46			—	
10	E	30·15	29·98	77	54			—	
11	SW	29·98	29·98	72	52			65	
12	SW	30·08	30·05	73	47			—	—
		30·24	29·48	88	39			4·20	1·92

NOTES T. F.—*May* 16, 17. *Cirrus* and *Cirrostratus* followed by *Nimbi;* but no rain fell hereabout. Distant thunder heard. 18. Close day: in the afternoon various modifications of cloud appeared; in some places they showed a tendency to *Cirrocumulus*, in others *Nimbification* seemed rapidly going on about 5 p. m. the sky, seen behind a large *Cumulostratus* under the setting sun, was of a deep brownish lake colour: as evening approached mountainous clouds rose majestically in the horizon, while others above were fringed with bright gold rain succeeded in the night. 20. A uniform mass of cloud obscured the at sunrise: as the day advanced it broke, and divided itself into several distinct modifications. *Cirrocumulus* of various figures, in some places looking like wind-rows of hay, in others consisting of small round *Nubeculæ,* appeared; as well as *Cirrus* spread out in continuous sheets approaching to *Cirrostratus,* while flocks of *Cumulus* floated along in the wind below. In the wind about noon I observed a *Cirrus* cloud of a very remarkable figure; it consisted of many light tufts of a sort of *horse-shoe figure,* rising one above another. In the evening the distinct modifications were lost in a general haziness of a reddish colour; in some places blackish spots appeared, which were the *Nuclei* on which *Nimbi* formed, and thunder storms continued through the night. 21, 22. Thunder storms with fair intervals. 23. *Cumuli* alone early: in evening, streaks of *Cirrus* above them; some clouds showed a tendency to *Cirrocumulus.* 24. *Cirrocumulus* followed by increased heat, and evening lightning. 25. *Cirrostratus* strewed at different altitudes, also *Cirrocumulus* and *Cumulus:* in the evening *Cirrostratus* becomes dense, and approaches to *Nimbus.* 26. Various clouds, evening lightning. 27. *Cirrus* ramifying about, becomes *Cirrostratus,* which obscures the sky. 30. *Cirri* and *Cumuli,* followed by undulated and plane *Cirrostratus.* 31. Stormy day; upper currents blow in various directions.

June 4. Various clouds through the day: in the evening extensive beds of *Cirrocumulus.* 5. Showers. 6. *Cirrocumulus, Cumulus,* &c. In evening a thin sheet of *Cirrostratus* exhibited a faint ill-defined simple lunar halo. 7. In the evening a simple lunar corona. 12. Various clouds like yesterday, with light showers: while at Plaistow with Mr. Howard, I observed large *Cumuli* pass under ramifying *Cirrus,* which rapidly (in consequence) became small flimsy *Cirrocumuli,* and presented a beautiful piece of sky.

NOTES J. G.—*May* 15th. Very considerable appearances of a storm in the W in the evening. 16. Some distant thunder in the afternoon—appearance of a heavy storm in the W at the same time. 18. Some gentle rain in the morning. 19. Gentle rain most of the day. 20. Lightning very frequent in the evening—thunder at a distance—about 10 p. m. a very vivid flash; immediately after which, a brilliant meteor descended in the SE. 21. About 4 a. m. a heavy thunder storm, the thunder remarkably loud—morning rainy. 22. Evening rather stormy; very frequent lightning, and thunder at a distance. 27. Evening rather clouded, with some lightning. 28. Very cloudy morning, wind high from the SW. 29. Wind very high all day—frequent lightning in the evening. 31. Some rain in the morning, with thunder.

June 2. Very rainy day. 8. Frequent thunder and lightning in the evening, with high wind.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·24 in.
	Least	29·48 in.
	Mean of the period	29·88 in.
Thermometer:	Greatest height	88°
	Least	39°
	Mean of the period	63·19°
Evaporation		4·20 in.
Rain		1·92 in.

EXTRAORDINARY METEOR.

On the first day of this period, about half-past 8 p. m. a very singular luminous meteor was seen to the NNW of *Geneva*, passing over France: the same appears also to have been seen from *Paris*. It had at first the shape of the letter S and was very slow in its apparent motion, being visible for seven or eight minutes, till concealed by a cloud: it was accompanied by a kind of whizzing noise. Professor Pictet, on comparing the different observations, concluded that it was elevated 24¼ leagues above the earth's surface.—(See NICHOLSON'S JOURNAL, vol. xxx. p. 216.)

TORNADO.

On the 12th of May, about five o'clock in the afternoon, a destructive phenomenon appeared at Bonsall, in the Peak of Derbyshire. A singular motion was observed in a cloud of a serpentine form, which moved in a circular direction, from S by W to N, extending itself to the ground. It began near Hopton, and continued its course about five or six miles in length, and about four or five hundred yards in breadth, tearing up plantations, levelling barns, and miners' cots. It tore up large ash trees, carrying them from twenty to thirty yards; and twisted the tops from the trunks, conveying them from fifty to a hundred yards distance. Cows were lifted from one field to another, and injured by the fall; miner's buddle-tubs, wash-vats, and other materials, carried to a considerable distance, and forced into the ground. This was attended with a most tremendous hail storm: stones, and lumps of ice were measured from nine to twelve inches circumference, breaking windows, injuring cattle, &c.—(P. LEDGER.)

AGITATION OF THE SEA AT PLYMOUTH.

An alarming and most uncommon flux and reflux of the sea took place May 31, commencing about 3 a. m. and not finally terminating till ten. The sea fell instantaneously about four feet, and immediately rose about eight feet: universal consternation pervaded the whole of the port. The vessels in Catwater were thrown about in the greatest confusion; many dragged their anchors, some drifted, and several lost their bowsprits and yards. About a quarter before seven the sea rose to the height of eleven feet, and again receded. At half-past nine the tide (half-flood) suddenly stopped; and, in a moment, ebbed six inches and a half; at ten it ebbed again in the most extraordinary manner, and then flowed as usual to high water. Two gales from SSW and E, preceded this astonishing phenomenon; but at the time of its occurrence the wind was light at SSW.

June 8.—About four o'clock, the tide again flowed and ebbed several feet in as many minutes, which continued at intervals for the space of four or five hours, during which the immense swell, commonly called a *bower*, drove into the harbours of Sutton Pool and Catwater, at the rate of four knots an hour, subjecting the vessels at anchor there to great danger. The wind was variable, but mostly south-west. During the operation of the *bower*, it thundered and lightened excessively.—(P. LEDGER.) [Is not this term applied to the sudden rush of the
nto a harbour, because the experienced shipmaster places his vessel at anchor
r stem or *bows* towards the quarter from which she is thus assailable ?]

STORMS OF HAIL, THUNDER, &c.

From the various accounts of these in the Papers at this season, the following are selected, for the purpose of comparison with phenomena under the corresponding dates in our Register:—

We learn by a letter from his Majesty's ship Indefatigable, that the ships which sailed under her convoy for the East Indies, met with a most violent storm of hail, rain, thunder, and lightning on the 20th of April, in lat. 46° 46′, long. 11° 39′ west. Four fire-balls passed along the Indefatigable, but they happily did no other damage than setting fire to the foretop-mast, which did not burn long. The Warley was also set on fire; the Perseverance had her maintop-mast struck; and the Warren Hastings her foretop-mast.

April 23.—A violent hail storm at night at Wynnstay, the seat of Sir W. W. Wynn. Some of the hail stones measured 2½ inches in circumference. The whole new range of hot houses, which were only that day finished, had 1123 panes of glass broken.

His Majesty's brig Piercer, being off Ushant, on the night of the 28th of April, encountered a most severe gale of wind at SW, &c. (Details of a tremendous sea as follow.)

April 29.—One of the severest hail storms ever remembered came on at Welton, and lasted for above a quarter of an hour. The damage done to the gardens was very great, all the fruit-trees being stripped of their blossoms, and the glass of the hot-houses perforated *as if bullets had been shot through them.*

May 19.—At Sheffield, there was a dreadful storm of thunder and lightning, accompanied with hail. The stones, which measured from one to five inches in circumference, were pieces of ice encrusted with frozen snow. The damage is beyond precedent. At Beauchief, a whirlwind tore up seven trees by the roots, broke several in the middle; many buildings were unroofed, and hay-stacks thrown down; *nearly all the water was carried out of Mr. Stead's mill-dam, and dispersed in the air.*

May 20.—A severe thunder storm came on at Ingatestone, accompanied with a deluge of rain. In ten minutes the water ran about three feet deep in the streets. The same night at Potter-street, on the road to Newmarket, hail stones nearly as large as pigeons' eggs fell, accompanied with the most terrific thunder and lightning.

HEREFORD, *May* 27.—We were visited by a dreadful storm of thunder and lightning, accompanied by torrents of rain, very destructive eastward of this city. It commenced about three o'clock in the afternoon, and continued with little intermission till past eight. (This storm and the consequent inundation of several thousand acres of land, destroyed a number of lives and much property.)

June 8.—A severe storm of rain, hail, and lightning took place in Birmingham and the neighbourhood. The hail, or rather pieces of ice, which fell, are described as of prodigious size, and considerable damage has been done to the windows.

WORCESTER, *June* 8.—This day another most tremendous storm of thunder, lightning, and rain took place about 11 a. m. equal to that of the 27th ult. except the hail.

A storm was also experienced (June 28) at Bury and its neighbourhood. The lower part of the houses were filled with water, which lay in the street five feet deep. The hail stones, 5-8ths of an inch in diameter, broke near five thousand panes of glass.—About twenty-six head of cattle were killed last week by the lightning, at Risby and Walsham, in Norfolk.

See the *Fig.* p. 142.

TABLE LVIII.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 6th mo. June 13	W	30·17	30·15	72°	46°			—	
14	SW	30·10	29·88	73	49			61	
15	SW	29·96	29·88	73	47			—	
16	W	30·10	30·04	72	50			31	—
17	NW	30·22		72	45			—	
18	SE	30·40	30·34	79	46			27	
19	NW	30·26	30·14	75	55			—	
20	NW	29·95	29·78	66	46			30	
21	N	29·90	29·78	62	43			—	—
22	N	29·94	29·91	60	44			36	5
23	N	29·87		60	51			—	
24	N	29·80	29·75	75	46			20	
25	E	29·95	29·84	79	53			—	
26	Var.	29·98	29·95	76	57			32	41
27	NE	29·95	29·89	74	61			—	9
28	N	29·96	29·91	67	60			—	50
29	N	29·91	29·89	68	59			—	
30	N	29·89	29·88	65	58			17	
7th mo. July 1	NE	29·88	29·86	66	61			—	
2	Var.	29·96	29·90	76	58			—	18
3	NE	30·13	30·00	59	48			16	—
4	NW	30·15	30·14	58	43			—	
5	SW	30·17	30·13	67	47			—	
6	N	30·10		71	54			—	—
7	N	29·98	29·97	67	54			36	7
8	N	30·00	29·98	73	52			—	
9	SE	30·10	30·06	75	57			—	
10	Var.	30·14	30·10	80	52			—	
11	NW	30·19	30·15	78	58			69	
		30·40	29·75	80	43			3·75	1·30

Notes T. F.—*June* 13. *Cumuli* early; in evening *Cirrus, Cirrostratus,* and *Cirrocumulus.* 14. Early the sky was filled with light *Cirrose* fibres, *Cumuli* floated beneath them: afterwards *Cirrocumulus, Cumulostratus,* &c. appeared. 16. Early appeared the *Cirrus,* followed by general obscurity and a gentle shower; afterwards *Cirrocumulus* was observed overhead through the general mistiness; about 3 p. m. the sky again became obscure, and it rained. In the evening the sky exhibited very interesting and beautiful phenomena. Long thin sheets of the *Cirrostratus* appeared in the N and NW, some of them acquired the appearance of the architectural cyma, they perpetually changed their figures, and some which extended over dense *Cumulostratus* became (apparently in consequence) *Cirrocumulus*, which cloud ultimately prevailed: at 11 p. m. I saw an extensive bed of it. 17—20. Fair weather. *Cirri* continually observed above, while *Cumuli* floated beneath them. On the 20th the morning was cloudy with few drops of rain, and a clear evening. 21. Sky well covered with clouds all the morning; afterwards it cleared, and *Cumuli* appeared. About 5 p. m. a smart shower came on, after which *Cumulostrati* continued to pass over, while *Cirrostratus* and *Cirrocumulus* appeared to extend over them in a higher region. Spongoid evanescent *Cumuli* also appeared. 25. Wind strong in the day. The evening was calm, and the sky above the setting sun of a rich yellow colour; a large bed of *Cumulostratus*, passing over, exhibited very beautiful deep red tints. About half-past nine a small meteor appeared in the SE, it was simply a stationary accension, and lasted scarcely a second. 27—*July* 3. Sky obscured with clouds almost all this time, with occasional rain, damp, and mostly warm air, and a north wind; it sometimes cleared for a short time, when several strata of clouds of various kinds appeared. 5. *Cirrus* seen early, followed by beautifully arranged beds of undulated *Cirrostratus* and *Cirrocumulus*, and lastly by *Cumulostratus*. 6, 7. Various clouds as heretofore. 8. A change in the electricity of the atmosphere was observable to day: a cloudy sky was followed by *Cirri* ramifying chiefly toward the east: in the evening the modifications appeared in their natural order, *Cirrus* the highest, and *Cirrocumulus*, *Cirrostratus*, and *Cumulus*, in successively lower regions.

NOTES J. G.—*June* 27. Rainy morning. 28. Very rainy day: some lightning in the evening.

RESULTS.

Prevailing Winds Northerly.

Barometer:	Greatest height	30·40 in.
	Least	29·75 in.
	Mean of the period	30·02 in.
Thermometer:	Greatest height	80°
	Least	43°
	Mean of the period	60°
Evaporation		3·75 in.
Rain		1·30 in.

SUBMARINE VOLCANO.

(From a coloured plate of the phenomenon, published by Boydell, 1812.*)*

"This eruption broke out in the sea on the 13th of June, 1811, about a mile from St. Michael's, (Azores.) On the 17th, Capt. Tillard, commander of H. M. S. Sabrina, in company with Mr. Reid the Consul, and two other gentlemen, proceded to the cliff nearest to it, which was between three and four hundred feet above the level of the sea. Its appearance when quiescent was that of an immense body of white smoke, revolving almost horizontally on the water; when suddenly would shoot up a succession of columns of the blackest cinders, ashes, and stones, in form like a spire rising to windward, at an angle of from 70° to 80° from the horizon, and to a height of between seven and eight hundred feet above the sea. The columns at their greatest height broke into branches, resembling magnificent pines: and as they fell, mixing with the festoons of white feathery smoke, assumed at one time the appearance of plumes of black and white ostrich feathers, at another that of the light wavy branches of a weeping willow. These bursts *were accompanied by the most vivid lightning,* and by a noise like the continued firing of cannon and musquetry intermixed: and as the cloud of smoke rolled off to leeward, *it drew up a number of waterspouts,* which formed a beautiful and striking addition to the scene. While the party were viewing the eruption, *a crater* began visibly to be formed above water, though the volcano was then only four days old, and the depth of the sea was thirty fathoms!"

The sequel of the account states that in little more than a fortnight a complete island was formed, nearly a mile in circumference, and about three hundred feet high: Captain Tillard took a drawing and plan of the phenomenon. From the *crater,* which continued open, flowed *a stream of boiling water* six yards over. This island gradually disappeared towards the close of the year, being converted by the waves into an extensive shoal: but in two months afterwards smoke again issued from the sea near the place.

THUNDER STORMS.

Waterford.—During the earlier part of Monday, July 1, the atmosphere was sultry almost in the extreme. Dark clouds were seen towards the NE, and thunder was heard at times from the same quarter. Till two o'clock, the wind blew from NW, at which hour it suddenly changed and blew from the E, and this city was almost immediately visited by one of the most tremendous storms that have, in all probability, ever been experienced in Ireland. For the space of an hour, the thunder and lightning succeeded each other in awful and nearly uninterrupted rapidity, accompanied by torrents of rain, together with hail stones, of a size greater than any inhabitant of the city remembers to have ever before seen. Some of them were two, and others three inches in circumference. The streets were every where overflowed; after the storm had subsided, the windows all along the quay, and wherever the houses were unprotected, exhibited the appearance of having been exposed to the assault of fire-arms, few of the panes of glass having escaped. The whole scene exhibited one of those sublime but terrible conflicts of the elements, which the English and Foreign Journalists have had frequent occasion recently to describe, but which are of rare occurrence in this island.

July 2.—In the neighbourhood of Wonash, near Guildford, after one of the most sudden strokes of thunder, a deluge of rain took place, so instantaneously as to carry away or destroy every thing which impeded its progress.—The damage is estimated at not less than 1,500*l.* The same day a thunder-storm, accompanied with torrents of rain, came on at Oxford and its vicinity. A barn at Finstock was set on fire by the electric fluid; the flames communicated to another barn, and both were destroyed, with a large quantity of wheat contained therein.

North Wales has been recently visited by several awful storms, and very serious injury has been sustained by many persons. On Wednesday, July 10, the town of Llanidloes was drenched with torrents of rain, accompanied by dangerous lightning; the windows of several houses were shattered at Trefeglwys, and a great number of sheep have been destroyed on the neighbouring hills.

A heavy storm of rain suddenly came on at Salisbury, July 10, attended with a phenomenon *supposed to be a water-spout*, which hung in a spiral form from the clouds, with the end waving to and fro like the tail of a kite. At first it appeared about a mile to the north of the city, and was drawn up into the clouds about the same distance to the SE. It passed over rather near to the earth, and *a rushing noise* was heard at the same time. Though the rain fell so very heavy there, it extended only two miles.—(PAPERS.)

Effects of Lightning on growing Potatoes.

During a thunder-storm in the summer of 1811, in my absence, the lightning was seen to strike the ground in a potatoe-field, about a furlong to the SW of my house at Plaistow. The spot where it fell (which was rather lower and moister than the surrounding parts) presented the following appearances. The immediate impetus of the lightning was clearly seen in a *smooth round excavation*, from which about a bushel of earth had been *dispersed:* from this proceeded a semicircular *furrow* of about five yards in length, losing itself imperceptibly by ramification. The growing potatoes, for the space of about a square rood, chiefly to the E of the cavity and furrow (and in the probable direction of the stroke) had suffered considerably, but without the least sign of scorching, or other immediate injury to the tops. The damage was *confined to the stems*, which for a few inches in height were partly burst or *riven*, partly turned *pulpy*. What is extraordinary is, that the far greater part of the plants *survived* the stroke, continuing to grow by means of the small remaining connexion of the top with the root. The pulpy ones died (precisely as by *frost)* mixed in every part with the rest, and many of them twenty yards distant from the cavity and furrow above mentioned.

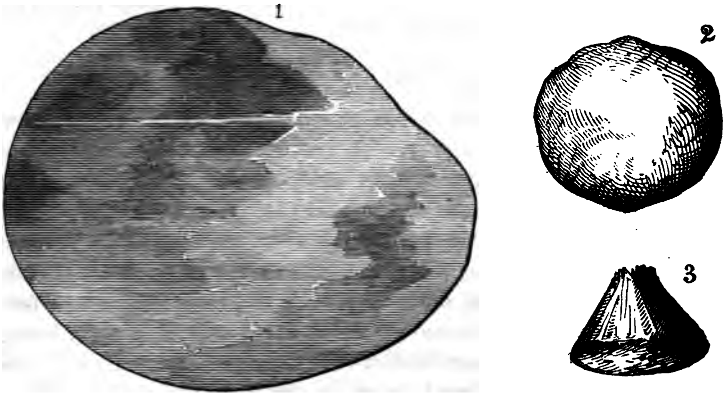
SAUSSURE *on the probable locality of Hailstorms.*

"The neighbourhood of this village [*Borgo Franco* in Piedmont] was visited on the 20th July, four days before our arrival, by a terrible hail-storm. The vines, torn to pieces and leafless, the maize in the fields partly laid flat on the earth, partly reduced to the appearance of broomsticks, the trees in general stripped and broken, presented altogether a truly deplorable spectacle. *We were informed that the place was peculiarly subject to this calamity.*

"It has often been observed in plains bordering on high mountains, (*Borgo Franco* is so situated as to the Alps,) that at a certain distance from the mountains, hail is much more frequent than in places that lie somewhat nearer or more remote. *There are distances, too, that seem privileged, where it is very seldom that any hail falls.* My father has an estate on the *Arve*, not quite half a league from the foot of Mount Salêve, on which there has not been within the memory of man any considerable fall of hail; the stormy clouds passing always either nearer to the mountain, or at a greater distance.

"Hail, we are certain, is necessarily connected with electricity. The clouds that deposit it are, therefore, unavoidably *charged:* and it should seem that, according as the electricity is similar or opposed to that of the mountains, they are either attracted or repelled thereby; and thus obliged to range at certain unequal distances from them."

Voyage dans les Alpes—Cap. xxxviii. § 972.



1. Piece of glass picked up in a green-house: 'Heu malè tum mites defendet pampinus uvas.'—*Virgil. Georgic.* i.—2. Hailstone: See p. 79.—3. Soft Hailstone: See p. 325.

Meteorological Observations,

MADE AT

PLAISTOW, NEAR LONDON,

IN THE YEARS

1811 and 1812.

(First published Monthly in Nicholson's Philosophical Journal.)

TABLE LIX.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7th mo. July 12	NW	30·03	29·91	76°	59°	78°	62°	—	
13	W	29·91	29·79	75	60	74	62	24	42
14	SW	29·83	29·76	65	59	71	58	—	—
15	S	29·83	29·80	71	59	76	62	—	—
16	SW	29·85	29·83	70	54	74	57	43	—
17	S	29·85	29·75	72	54	77	57	—	12
18	SW	——	——	71	60	82	61	—	57
19	SE	29·94	29·75	73	54	78	54	—	—
20	W	29·94	29·90	64	53	63	53	47	79
21	Var.	29·88	29·82	60	53	68	53	—	1·61
22	W	30·01	29·88	70	50	69	53	—	
23	NW	30·11	30·01	69	50	69	52	—	
24	NW	30·15	30·11	72	54	76	57	—	
25	NW	30·14	30·12	73	55	76	57	57	
26	SW	30·12	30·09	72	51	72	55	—	
27	N	30·09	29·91	74	55	81	56	—	
28	SE	29·91	29·85	78	54	86	56	32	
29	NE	30·11	29·85	75	54	74	54	—	
30	N	30·11	30·08	67	49	70	48	—	
31	NE	30·08	——	68	52	67	54	42	
8th mo. Aug. 1	NE	——	29·90	76	53			—	
2	S	29·90	29·69	73	51			—	
3	SW	29·67	29·58	76	51			43	11
4	NW	29·73	29·60	68	54	70	57	—	27
5	S	29·65	29·62	66	52	66	54	29	
6	S	29·59	29·48	63	50	74	52	—	26
7	NW	29·60	29·50	67	54	73	56	—	15
8	SW	29·49	29·35	62	50	69	51	32	74
9	NW	29·60	29·48	64	45	62	47	—	33
10	NW	29·86	29·60	61	44	61	45	29	—
		30·15	29·35	78	44	63	73	3·78	5·37

Notes.—Seventh Mo. 15. Small rain about 2 p. m. 19. A thunder shower early: fine day. 20, 21. Forty-eight hours' rain. 22. Temperature 60° (the maximum for twenty-four hours) at 8 a. m. 26. Orange-coloured *Cirri* at sunset. 27. Thunder clouds: a few drops p. m.: much dew. 28. *Cirrocumulus* cloud, very beautiful, interchanging with *Cirrostratus,* succeeded by large *Cumuli.* In the evening some appearance of a thunder storm far in the NW. 29. Evening, parrallel bars of *Cirrostratus,* stretching E and W: a blush on the twilight. 30. Windy, cloudy.

Eighth Mo. 2. Large elevated *Cirri.* 3. *Cirrocumulus,* followed by *Cirrostratus:* evening overcast: rain by night. 4. Windy, at SW, by night. *Cumulostrati,* in various quarters, at sunset. 7. Opaque twilight, with *Cumulostratus.* 8. Very wet, a. m; at noon a thunder shower; at 6 p. m. a heavy squall from NW, with rain and hail; the *Nimbus,* as it receded, presenting a perfect and brilliant bow: windy night. 9. Large *Cumuli* rose, and at noon inosculated with the clouds in a superior stratum: a thunder shower ensued before 2 p. m. after which appeared the distinct strata again: about 6 p. m. a second thunder shower, long very dense in the SE, where the bow was conspicuous above an hour. This day was nearly calm. 10. Rain fell again about noon, upon the union of two strata of cloud.

NOTES T. F.—*Clapton, July* 16. Showers, with fair intervals a. m., evening clear, the sky abounding with *Cirri,* ramifying about, and generally pointing to the E: their kind of (internal) motion may be compared to that of a piece of cheese full of mites. [Electrical adjustments—very visible in the larger clouds before thunder.—L. H.] 17, 18. Warm with various clouds.

August 10. Showery day: very clear night: small meteors were very abundant, with this remarkable circumstance, that their trains lasted longer, after the extinction of the lucid head, than usual.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height	30·15 in.
	Least	29·35 in.
	Mean of the period	29·835 in.
Thermometer:	Greatest height	78°
	Least	44°
	Mean of the period	61° [Labʸ· 63·72°]
Evaporation		3·78 in.
Rain		5·37 in.

Character of the period changeable, with much rain.

STORMS.

July 19.—A most tremendous storm of thunder, lightning, rain, and hail, visited the parish of Guilsheld, Montgomeryshire; a large oak tree, containing about fifty feet of timber, growing near Varenwell, was rent asunder from top to bottom, and the bark thrown to a distance of upwards of twenty yards.

July 21.—A heavy fall of rain did much damage at Stamford. In the meadows about Barrowden, Wakerly, Harringworth, Thorpe, Caldecot, and Bringhurst, immense quantities of hay were carried away. Several thousand loads, it is supposed, have been destroyed, in addition to which the injury sustained by the land has been very great. The water rose thirteen feet in less than four hours in Wood Newton parish.

X.

Temp.		T. N.			Rain, &c.
Max.	Min.	Max.	Min.		
[illegible]	42	[illegible]	41	—	
64	50	65	54	—	
73	52	76	53	33	—
66	47	66	49	—	
68	51	71	52	—	—
68	57	71	49	37	—
70	45	70	46	—	
72	55	76	56	—	2
68	54	71	55	30	35
64	57	66	48	—	5
68	56	67	54	—	
71	52	80	51	41	—
68	55	77	56	—	4
70	55	78	56	—	—
65	48	70	50	16	39
67	56	72	58	—	
68	44	73	48	—	1
66	51	77	53	42	
69	46	72	47	—	2
69	47	71	46	24	
71	53	77	54		
[illegible]	45	68	49		
65	45	64	46		
64	53	66	54	34	
62	53	65	53	—	
71	52	72	50	—	
73	44	75	46	35	
72	43	74	44	—	
71	47	75	48	22	
71	42	60	88	3·14	0·88

NOTES.— ... s. dense about noon, but
der sh... ...st ensued. 12. a. m. cloudy:
pera ... ...in the S by inosculation.
26. ... ...asing above: p. m. clouds
d ... C...rus, coloured at sunset.
... some large drops about
... ...ared with red and yellow,
...windy night. 16. a. m. Windy:
...ed C...rus and *Cirrocumulus*,
...s 19. a. m. thunder showers,

chiefly to SSW and N: a strong variable charge in the insulated conductor: evening fair and windy, with *Cumulostratus.* 20, 21. Windy: much dew. 22. Light rain a. m.: showers p. m. 23. Misty morning: *Cumulus,* with *Cirrostratus* from the S: about *one,* these inosculated, and showers prevailed p. m. 24. Misty morning: *Cumulostratus:* a few drops of rain: evening *Cirrostratus.* 25. Misty, and rainy at half-past 8, a. m.: wind SE: evening, *Cumulostratus* evaporating, beneath a veil of *Cirrus,* which at the moment of sunset was of a light silver grey, and during twilight passed through yellow, orange, red, and purple to dull grey; and lastly became again somewhat red: much dew with a very moist air. 26. A small lunar halo, on clouds moving in a northerly current. 27. Windy, a. m.: small rain, evening: much dew. 28. Windy. 30. a. m. *Cirrus,* with points dependent and crossing, and *Cumulus* forming beneath: at 9 p. m. *Cirrocumulus,* with much dew: the barometer unsteady. 31. Fine day: *Cumulus, Cirrus, Cirrocumulus:* a diffused blush on the twilight, which begins to be very luminous.

NOTES T. F.—*Clapton, August* 21. All the modifications appeared in the day; at times it was quite clouded: in the evening the upper currents, by two Montgolfier balloons, appeared to be S and NW. 23. A balloon, which did not ascend very high, went first with a SW, then with a S wind. 28. Early appeared *Cirri* in a lofty region, while *Cumuli* floated below; cloudy by night. 29. Clear warm morning with various clouds and a strong current from the south, cloudiness and rain followed; a small air-balloon that I launched at one o'clock went with a SW wind. Mr. Sadler in his balloon went with a W and SW wind alternately: the evening was cloudy, and wind various both below and above, as appeared by many fire-balloons. 30. Large *Cirri* ramified about in the morning, and *Cumuli* flew along in an under current; at night the wind next the earth was N, above it E, and still higher, long beds of *Cirrocumulus* passed over from SW. 31. Flimsy *Cirrocumulus* from SW.

RESULTS.

Wind Westerly, with little exception, to the time of Full Moon, when it came round by N to the Eastward.

Barometer:	Greatest height	30·29 in.
	Least	29·50 in.
	Mean of the period	30·025 in.
Thermometer:	Greatest height	74°
	Least	42°
	Mean of the period	59·20° [Lab$^{y\cdot}$ 60·88°]
Evaporation		3·14 in.
Rain		0·88 in.

TABLE LXI.

1811.	Wind.	Pressure.		Temp.		T. No 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9th mo. Sept. 9	E	30·17	30·15	75°	51°	77°	49°	—	
10	E	30·15	30·05	77	46	77	47	—	
11	Var.	30·15	30·00	80	55	78	56	45	
12	E	30·19	30·15	73	53	75	52	—	
13	E	30·11	30·01	71	40	75	41	—	
14	E	30·02	29·98	74	45	77	47	56	
15	NE	30·07	30·02	70	55	71	56	—	
16	E	30·05	29·98	66	44	70	45	—	
17	E	30·05	29·95	70	47	73	46	—	
18	E	29·95	29·87	71	44	73	45	95	
19	SE	29·87	29·50	74	47	74	49	—	
20	SE	29·53	29·50	74	51	78	51	—	—
21	S	29·80	29·53	66	54	74	56	32	8
22	Var.	29·80	29·60	65	52	66	56	—	—
23	SW	29·60	29·43	61	43	64	46	—	14
24	NW	29·62	28·92	64	49	68	51	30	14
25	W	29·26	28·86	60	48	63	49	10	46
26	W	29·21	29·17	61	39	65	47	—	10
27	SW	29·33	29·20	51	40	52	43	18	45
28	NW	29·54	29·33	62	44	59	47	—	—
29	NW	29·71	29·54	64	51	63	50	—	20
30	SW	29·72	29·55	62	50	64	54	22	16
10th mo. Oct. 1	W	29·76	29·47	63	46	65	48	—	4
2	SW	29·87	29·85	64	39	64	38	19	
3	E	29·85	29·46	61	52	65	54	—	26
4	S	29·57	29·46	69	59	73	62	—	2
5	SW	29·75	29·57	67	54	75	57	35	15
6	SW	29·95	29·87	63	52	64	55	—	18
7	SW	29·92	29·85	69	54	71	57	21	1
8	SW	30·00	29·90	67	53	68	56	10	
		30·19	28·86	80	39	59	50	3·93	2·39

NOTES.—Ninth Mo. 9. Before sunset, after a serene day, *Cirrus* clouds, pointing downwards from the W. 11. *Cirrocumulus*, some dry haze wind westerly by night, scarcely sensible. 14. *Cirri* and haze in the evening: twilight of a bright orange colour. 15. Much wind: clear. 16. a. m. overcast: p. m. clear. twilight duller, with *Cirrostratus*. 17. Much wind: very clear sky. 18. As yesterday: evening twilight luminous, orange surmounted with rose colour, the latter somewhat in converging streaks. 19. Morning twilight obscure, with dense *Cirri:* much dew: wind a. m. NE: thunder clouds at different heights, some of which moved from the SE: there were clouds throughout the night, with lightning. 20. Wind a. m. NE: thunder clouds again, which grouped, and passed about 2 p. m. to the W, with a few drops: *Nimbi*, with a faint bow, in the distance: evening cloudy, with two strata: wind SE: much lightning in the SW. 21. a. m. cloudy: rain, with distant thunder at one and p. m: *Nimbi* and *Cumulostratus:* faint bow. 22. a. m. overcast: wind veered to NW, apparently by E: *Cirri*, in lines from NE to SW. 23. a. m. wind fresh from SW, with rain; p. m. fair, with various modifications of cloud, which were finely coloured at sunset in the east. 24. a. m. clear: much dew: fair day, but with clouds indicating rain: twilight milky, with a blush of red: the moon disappeared early, behind *Cirrostratus* clouds, and it rained heavily in the night. 25. Cloudy and windy, with rain. 26. a. m. *Cirrus* with *Cumulus:* p. m. showers. 27. Windy: wet. 28. a. m. misty: p. m. showers, *Cirrostratus*, and a blush on the twilight. 29. Evening, lightning: wet night. 30. Lunar halo.

Tenth Mo. 1. a. m. wind SE, showery. 2. A little before sunrise I observed a *Stratus* in the marshes to the SE, very nearly resembling a sheet of water; *one which was seen from this village, in similar circumstances, about two weeks since, was actually taken by several persons for an extensive inundation:* in the afternoon, large elevated *Cirri* and *Cirrostrati*, rapidly passing at sunset from red to grey, indicated a renewal of the wet weather. 3. Misty morning, with *Cirrostratus* above: very wet, p. m. 4. Much wind: cloudy night. 5. Squally. 6. a. m. cloudy, much wind: evening calm; large *Cirri* and *Cirrostrati*, with a blush on the twilight: a bright blue meteor in the NW: wet night. 7. Cloudy, with a gale of wind. 8. Fair.

RESULTS.

Barometer:	Greatest height . . .	30·19 in.
	Least	28·86 in.
	Mean of the period . .	29·736 in.
Thermometer:	Greatest height . .	80°
	Least	39°
	Mean of the period . .	57·85° [Lab^y. 59·50°]
Evaporation		3·93 in.
Rain		2·39 in.

From the Full Moon of the last period to the New Moon of the present, easterly breezes with clear days, and the *Stratus* by night. Evaporation went on increasing as the wind became stronger: dew fell in plenty, and the small meteors, called shooting stars, were abundant. The latter half of the present period brought the accus-

[illegible] from the westward: the approach of this [illegible] beforehand: and the ground being [illegible] at the beginning with some discharges of elec-[illegible].

[illegible] ON THE CONTINENT.

[illegible] the extreme heat, unaccompanied [illegible] has entirely destroyed the hopes of the [illegible]. The [illegible] of wheat, oats, and barley, have been burnt up. The [illegible] have disappeared; the trees are [illegible] rendered so hard that they cannot [illegible].

[illegible] have witnessed the conflagration of several [illegible] destruction of sixty-four villages and [illegible] near ten thousand head of [illegible] destroyed, is about seven [illegible] distant three leagues from In-[illegible] and had not ceased burning on the [illegible].

[illegible] thunder and lightning was experienced [illegible] number of windows. It came from [illegible] violent at Worcester: the [illegible] Malvern Hills: it was preceded [illegible] the lightning was of a very vivid [illegible] damage.

[illegible] a violent storm from the [illegible]

[illegible] a tremendous gale of wind the [illegible]

[illegible]

[illegible] officer belonging to the *Tartarus*, [illegible] tempest on the American coast, in [illegible] severity:—" On the morning of [illegible] the American coast, under the orders [illegible] accompanied by the Africa, sixty-[illegible] weather, with every prospect of [illegible] ships were ever in a better state of equip-[illegible] dangers of the perilous ocean. On the [illegible] pretty near our cruizing ground off [illegible] west, a heavy gale of wind came on [illegible]. The Eolus, our Commodore, taking [illegible] *barometer*, made all [illegible] followed the example, though every sail in [illegible] top-gallant-mast got on deck, our [illegible] and every thing removed out of the tops. [illegible] with a mountainous sea, during which [illegible] the barometer until scarcely a particle of it [illegible] near the lower extreme of the scale, or twenty-eight inches. L. H.] but the scenery of the sky it is impossible to describe. *No horizon appeared, but only a something resembling an immense wall, within ten yards of the ship*—at this moment we lost sight of our Commodore, who had only a short time before wore on the other tack: we were in the act of following his motions, when being before the wind, and just coming to, we were laid on our beam ends; our mizen and main-topmasts were blown away, although there was not any sail on them, and *without any person's hearing the crash;* in an instant five feet water rushed into the hold, through the ports of the main deck, (all the hatchways were battened down,) and the water had reached the coamings of the quarter-deck, when orders were given to throw overboard the larboard quarter-deck guns, and the sheet-anchor, or we must inevitably have foundered. In this state we remained nearly half an hour, expecting every moment to be our last, as the stillness of the ship convinced us that she was settling down. We were about to cut away our masts, when fortunately feeling the ship sally to windward, from that moment we entertained some hope. During all this time the pumps were at work, yet we gained but little, for it was the rudder-coat which had burst in and occasioned the water to rise upon us, and this it still continued to do without our being able to prevent it. The bulk-head of the coal-hole having been washed down by the quantity of water in it, the coals were carried into the well, and three pumps were rendered useless. In the midst of this distress, a faithful servant stationed at the barometer to watch its change, called up through the sky-light (the frame of which had been washed overboard) with great joy, that *the quicksilver had risen an inch*, and still continued to rise. This inspired all hearts with fresh spirit, but no men could behave better, or do more than our crew did. After we had relieved the ship from a great quantity of water, we found the main-mast tottering, and every minute expected that and the bowsprit to go, but our greatest care was the preservation of the lower masts, to save the ship from foundering after the gale, for want of something to bring her to.—All our booms and boats were washed overboard, but we succeeded during the height of the storm, in lowering the main-yard on deck, by which means we saved the main-mast from falling, as the rigging had sundered through its seizings, and nothing else could have preserved it. The gale had by this time considerably abated, and about six o'clock in the evening it cleared off, though still blowing hard. We again saw the Æolus about a mile and a half from us, and, with respect to her masts, she had suffered more than the Tartarus. I would, if possible, give you a description of the noise occasioned by the hurricane, but I am unequal to the task: if you can conceive, however, all the savage animals of the brute creation assembled to affright mankind by their roaring, you will have some faint idea of the deafening variety of sounds in the tempest we experienced! The day before yesterday all four ships met together off the harbour, and, under jury-masts, all went in together complete wrecks."

TABLE LXII.

1811.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 10th mo. Oct.	9	SW	30·00	29·99	67°	54°	69°	56°	—	
	10	SW	29·99	29·77	63	57	65	59	—	
	11	SW	29·77	29·60	65	51	70	53	—	
	12	S	29·80	29·60	62	48	71	49	40	8
	13	SW	29·90	29·86	62	49	61	51	—	3
	14	S	29·86	29·81	63	51	64	55	—	1
	15	S	29·76	29·75	73	53	77	52	33	
	16	S	30·03	29·76	70	55	68	58	—	
	17	Var.	30·10	30·03	71	47	74	46	—	
	18	SW	30·16	30·10	68	50	73	58	—	11
	19	Var.	30·21	30·18	65	49	65	51	20	
	20	SW	30·05	29·96	64	55	65	56	—	
	21	SW	29·96	29·50	65	56	67	59	20	
	22	S	29·52	29·46	64	50	67	51	—	15
	23	SW	29·50	29·48	60	49	67	51	—	
	24	Var.	29·48	29·35	57	42	57	45	20	8
	25	S	29·35	28·65	53	38	56	41	—	18
	26	Var.	28·80	28·65	54	41	57	43	15	32
	27	SE	28·84	28·81	56	43	56	41	—	11
	28	Var.	28·84	28·80	56	41	54	42	15	44
	29	SW	29·05	29·00	55	43	53	44	2	18
	30	Var.	29·55	29·00	58	43	61	45	—	14
	31	W	29·77	29·68	59	48	60	51	15	14
11th mo. Nov.	1	SW	29·68	29·62	62	57	70	60	—	11
	2	SW	29·58	29·50	62	53	72	55	34	14
	3	SW	29·70	29·60	58	48	58	49	—	8
	4	W	29·98	29·80	60	42	56	45	17	—
	5	SW	29·89	29·83	56	43	57	47	—	25
	6	SW	29·83	29·52	53	45	58	48	13	50
			30·21	28·65	73	38	57	88	2·44	3·05

NOTES. Tenth Mo. 12. Windy: wet evening. 13. Much wind. 14. A shower before 9 a. m., at which time occurred the maximum of temperature. 15. Much dew on the grass: serene day: twilight milky, with converging streaks of red. 16. a. m., Much dew: a mist on the river: the smoke of the city was remarkably depressed, and sounds from thence unusually strong: some thunder clouds appeared and passed to E. 17. *Cumulus* clouds surmounted with *Cirrostratus*, and Cirri above. 18. A very wet mist a. m., wind NW: at 2 p. m. cloudy: very moist air, the *dew point* (or temperature at which a body in the air condenses water from it) being 63°; *and about* *sunset, at temperature* 63°, *I found dew just beginning to be deposited on the grass:* it rained hard about five next morning. 19. a. m. Misty, small rain: p. m. clear: evening *Cirri* very elevated, and long coloured red; a *Stratus* forming. 20. Misty: then overcast: the wind, which had been E, veering by S: abundance of *gossamer.* A quicken tree *(sorbus aucuparia)* exhibits a new set of leaves and blossoms along with the ripe berries. 21. Grey morning, with little dew and a strong breeze. 22. Dew scarce perceptible: wind veers to S, a breeze: p. m. very cloudy, with showers: much wind at night. 24. At midday a drizzling rain, during which the vane turned to E. 25. Clear fine day: wind veered to S: at sunset *Nimbi* and *Cirrostrati* in SW: heavy shower by 11 p. m. 26. Showery: a fine rainbow at 10 a. m. 27. *Nimbi* a. m. in different quarters, mixed with *Cumulus* and *Cirrostratus,* beneath large plumose *Cirrus* clouds. 28. Clear a. m. much dew, *Nimbi* forming amidst various clouds: vane at NE: p. m., a shower in the S, during which appeared, for a short time, a numerous flight of swallows; they had been last observed on the 15th: the wind returned by S to NW, with much cloud and rain. 30. At 9 a. m. the rain intermitting, the highest and most considerable mass of clouds was moving from W, an intermediate portion from S, and the wind below fresh at E: *in this state of things sounds came very freely from the westward,* and by eleven the wind was SW: at 3 p. m. distinct *Nimbi* and a bright bow: showery at night, with a lunar halo. 31. a. m. Clear: the sun and moon appeared red on the horizon; at night, *the wind being S, sounds came loud from the W.*

Eleventh Mo. 1. Much cloud a. m.: wind fresh at SW. 2. As yesterday: stormy at night. 3. A rainbow at 8 a. m. 4. *Nimbi* a. m. to windward: at sunset, the dense clouds in the E finely coloured: rainbow: wind W. 5. Stormy a. m.: wet p. m. 6. Cloudy, showery: evening, abundance of *Cirrostratus:* a wet night.

RESULTS.

Barometer:	Greatest height . . .	30·21 in.
	Least	28·65 in.
	Mean of the period . .	29·614 in.
Thermometer:	Greatest height . . .	73°
	Least	38°
	Mean of the period . .	54·86° [Lab^y. 57·08°]
Evaporation	. . . . . .	2·44 in.
Rain	. . . .	3·05 in.

Wind with little exception SW and S: very stormy on the west coast the last week of Tenth month. The fore part of the period changeable; the latter wet, without the usual intervening frosty nights.

TABLE LXIII.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 11th mo. Nov. 7	NE	29·58	29·43	52°	41°	50°	43°	—	7
8	S	29·65	29·35	52	42	52	44	6	19
9	Var.	29·67	29·34	54	47	53	48	—	34
10	SW	29·34	29·22	55	39	54	42	10	21
11	NW	29·91	29·22	52	36	51	38	—	3
12	NW	29·60	29·50	54	38	51	44	18	22
13	W	29·73	29·69	52	35	52	38	—	
14	SW	29·65	29·57	55	40	52	41	12	7
15	W	29·57	29·49	48	36	45	37	11	8
16	NW	29·66	29·49	50	41	48	40	—	
17	SW	30·17	29·66	49	44	48	44	—	
18	N	30·25	30·17	50	45	50	46	—	1
19	N	30·39	30·25	53	31	50	31	12	
20	NW	30·39	30·32	48	28	43	31	—	
21	SW	30·32	30·25	46	29	42	32	6	
22	E	30·22	30·18	45	25	44	27	—	
23	NW	30·24	30·22	47	28	42	32	6	
24	SW	30·35	30·24	46	33	46	37	—	
25	NW	30·36	30·35	50	38	49	41	5	
26	W	30·41	30·35	47	41	46	42	—	
27	SW	30·40	30·35	44	40	45	42	6	
28	W	30·35	30·27	48	39	46	42	—	
29	SW	30·27	30·25	47	42	46	44	—	
30	SW	30·25	30·10	50	41	51	42	8	
12th mo. Dec. 1	SW	30·10	29·50	52	48	52	46	13	
2	NW	29·86	29·50	52	34	46	36	8	15
3	SW	29·86	29·32	50	40	50	41	13	4
4	W	29·45	29·21	46	31	45	31	—	
5	N	29·96	29·74	32	22	31	25	—	
6	SW	29·74	29·56	50	28	50	31	15	
		30·41	29·21	55	22	43	13	1·49	1·41

NOTES.—Eleventh Mo. 7. A calm, pleasant day. 8. Cloudy, drizzling. 9. Wind, a. m. NW: a dripping mist: then clear and calm: *Cirrostratus*, evening: rain before nine the next morning. 10. *Nimbi* at sunset, with red haze on a brilliant twilight. 11. At sunset the clouds coloured in the E: a *Nimbus* in the W: windy night. 13. A clear sunset beneath dense clouds. 14. Windy, SW a. m. 15. Clear, windy *Nimbi* at sunset to S. 18. Dripping mist. 19. Fair: *Cumuli* p. m., which evaporating at sunset, a beautiful red twilight ensued, with *Cirrostratus*. 20. Hoar frost and *ice, the first this season:* clear day, with *Cirrus* clouds: at sunset, the purplish haze of the dew was conspicuous, and the twilight of a rich crimson, with converging darker streaks upon it, probably the shadows of prominent objects on the earth. 21. Hoar frost: a *Stratus* in the evening. 22. Cloudy through the day in the superior atmosphere: twilight milky and luminous, with a blush of red. 23. Much rime on the grass, &c.: the sun emerged suddenly from the surface of a dense frozen mist, *Cirri* stretching from E to W, *Cirrostrati* and *Cumuli* beneath: the evening quite overcast. 24. Various modifications of cloud ending in *Cumulostratus.* 25. Morning twilight red. 26. Calm, lightly clouded. 27. Overcast: a few drops p. m. 29. At sunset, a *Stratus,* with a veil of superior clouds on the western sky richly coloured, the reflection of which gave considerable colour to the *Stratus* itself: wind above NW. 30. Cloudy. The weather has been calm since the 15th instant.

Twelfth Mo. 1. This morning the wind rose, bringing much cloud, with a few drops of rain: the night was stormy, and the evaporation was increased near sixfold: hence the formation of so great a mass of cloud, the superior atmosphere not being in a state to take up the water. 2. Rain commenced soon after 8 a. m.; about this time too the thermometer, which had been rising, began to fall; the barometer, which had been descending, to rise; and the wind, which had been SW, to go to the N. 3. Wind, a. m. fresh at SW: the sky overcast chiefly with *Cirrostratus:* stormy night: shower about 1 a. m., after which the wind abated. 4. Clear, windy a. m.: various clouds p. m. 5. Snow early this morning: wind N: evening twilight orange coloured, but with fainter horizontal streaks of cloud above it, which were also discernible at the ensuing sunrise, with *Cirrostratus* beneath: windy.

RESULTS.

Barometer:	Greatest height . . .	30·41 in.
	Least	29·21 in.
	Mean of the period . .	29·898 in.
Thermometer:	Greatest height . . .	55°
	Least	22°
	Mean of the period . . .	54·20° [Lab^{y}· 53·13°]
Evaporation	. . . . . .	1·49 in.
Rain .	. . . .	1·41 in.

Wind chiefly SW and NW. The fore part of the period wet, the middle fair and tending to frost, the conclusion windy and changeable. There has been a strong tendency to the red refraction during twilight.

TABLE LXIV.

1811.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 12th mo. Dec 7	SW	29·56	29·35	54°	52°			—	—
8	S	29·40	29·23	53	40	54°	41°	10	42
9	SW	29·08	28·90	48	36	49	38	4	50
10	Var.	29·67	29·08	41	32	40	33	—	2
11	NW	29·96	29·67	45	32	44	31	—	—
12	SW	29·96	29·86	49	33	52	37	—	1
13	W	29·85	29·77	54	35	55	35	22	30
14	SW	30·00	29·85	42	30	39	32	—	
15	SW	30·00	29·50	47	35	47	36	—	18
16	SW	29·58	29·39	42	36	41	37	—	1
17	SW	29·86	29·58	40	31	41	32	—	
18	SW	29·86	29·75	52	33	52	35	25	3
19	SW	29·70	29·68	52	46	54	49	—	13
20	W	29·68	29·60	53	49	53	48	—	16
21	NW	30·15	29·60	49	27	48	28	—	3
22	W	30·18	30·06	45	32	45	28	—	
23	W	30·15	30·06	51	38	50	41	—	
24	NW	30·19	30·15	43	28	43	27	—	5
25	SE	30·20	29·98	39	24	35	24	—	
26	SW	29·98	29·55	32	21	31	22	—	—
27	NE	29·27	29·16	34	26	35	25	—	14
28	NW	29·67	29·27	35	27	34	27	—	5
29	N	29·96	29·67	32	22	31	19	—	
30	SW	30·08	29·96	30	25	30	23	—	
31	SW	30·08	29·88	35	31	34	26	—	
1812. 1st mo. Jan. 1	SW	29·88	29·70	43	34	41	35	—	
2	S	29·70	29·56	48	31	45	32	—	
3	S	29·55	29·46	44	29	42	30	—	3
4	N	29·46	29·37	38	33	39	32	—	41
5	NW	29·76	29·47	37	29	36	30	60	26
		30·20	28·90	54	21	37	81	1·21	2·73

Notes.—Twelfth Mo. 7, 8. Much wind; showery. 9. *The wind at* 9 *a. m. E, yet sounds came freely from the westward, together with the clouds. Nimbi:* rainbow; showers through the day; a brilliant twilight. 10. A gale of wind a. m. then fair. 12. A dripping mist. 14. Clear day; an extensive redness on the twilight.

1812. First Mo. 2. About 10 a m. there having been no rain for some days, a few light clouds, just formed, and coming from the westward, suddenly exhibited a segment of a rainbow, terminating above and below at the edge of a mass of cloud. As the latter advanced by the north, and became denser, the arch increased, and became at length nearly complete, the eastern extremity descending towards the earth, with the usual appearance of rain under the clouds. The western end now began to fade, and was soon reduced to a pale white, which gradually pervading the whole, the bow disappeared, having lasted about ten minutes. It afforded an example of rain, formed and propagated in the atmosphere with such rapidity, as scarcely to give time for the previous appearance of buoyant particles, in the form of cloud.

NOTES T. F.'s *Journal, Clapton.—December* 7. Misty and cloudy, with showers toward night, and strong wind. 8. Hazy and cloudy, rain at night. 9. Much rain with wind. 10. Windy with some rain, fair by night. 11. Wind gentle from NE; a balloon launched at 10 a. m. indicated an upper current from the east: *Cirrocumulus*, &c. cloudy night. 12. Yellow fog, afterwards cloudy and windy, with small rain. 13. Wind and small rain. 14. Clear morning, rain at night. Cloudy and hazy; small rain. 16. Fair; wind very high; light showers. 17. Morning cool; evening warmer with small rain. 18. Cloudy and hazy all day, with very little wind; starlight at times by night. 19. *Cirri* and haze: cloudy. 20. Small rain: wind by night. 21. Cloudy, windy, hazy: some rain. 22. Fair day: various clouds: at night a *corona lunaris* coloured. 23. Various clouds: the atmosphere finely coloured at sunset. 24. Cloudy and hazy. 25. Clear, and a few light *Cirri*. 26. White frost and cloudy sky; some *Cirri*. 27. Cloudy, frosty: snow and rain. 28. Some snow toward evening. 29. Cloudy. 30. Clear, a. m. cloudy, p. m. 31. Cold, frosty, and cloudy morning: then warmer.

1812. *January* 1. Complete thaw. 2. Lofty *Cirri*, then showers. 3. Clear and showers: windy night. 4. Foggy. 5. Showery.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height	30·20 in.
	Least	28·90 in.
	Mean of the period	29·708 in.
Thermometer:	Greatest height	54°
	Least	21°
	Mean of the period	38·06° [Lab^{y}· 37·81°]
Evaporation		1·21 in.
Rain, (including several products of snow)		2·73 in.

Experiments made in order to ascertain the Products of the Rain Gauge at different heights, and the proper situation for this Instrument.

It is a fact long established, that two rain gauges, placed at different heights, afford unequal products; the lower commonly yielding more than the higher. The following table gives the results of observations on this subject made during twenty successive days, on which rain fell at Plaistow; the elevation or depression of the *mean temperature* for the twenty-four hours, and direction of the prevailing wind being added.

Table of the Products of Rain in the Guages No. 1 and 2, with the Changes of Wind and Temperature.

1811.	Wind.	M. Tem. higher	M. Tem. lower.	Rain in No. 1.	Rain in No. 2.	REMARKS.
10th mo. Oct. 24	Var.		5°	5	8	Misty rain about midday; little wind veering from SW to E.
25	S		4	—	—	
26	Var.	2°		45	50	Showers chiefly by night.
27	SE	2		10	11	Rain by night.
28	Var.		1	44	44	Clear a. m. with dew; *Nimbi;* vane SE, p. m. a heavy shower to S; wind veered by S to N W; then much cloud and rain.
29	SW			18	18	Showers.
30	Var.	2		8	14	Three currents in the air—see Journal under this date.
31	W	3		13	14	Rain by night.
11th mo. Nov. 1	SW	6		5	11	Much cloud with a fresh breeze.
2	SW		2	6	14	Cloudy; much wind; stormy night.
3	SSW		4	6	8	Rain by night.
4	W		2	—	—	
5	SW		2	9	25	Stormy a. m.; wet p. m.
6	SW			31	50	Showery day; *Cirrostratus* evening; wet night.
7	NE		3	6	7	Rain by night.
8	S	1		16	19	Cloudy; drizzling.
9	Var.	3		29	34	
10	SW		3	19	21	
11	NW		3	1	3	Windy night; *Nimbus* at Sunset.
12	NW	2		11	22	Windy night.
				2·82 in.	3·73 in.	

The upper gauge, No. 1, is fixed on the NW angle of a glass turret or observatory, on the house top, having a small vane and a conducting rod a few feet to the S and SE, but no other commanding object near it. The whole of the amounts of rain given in the tables in the *Athenæum* during 1807, 1808, and part of 1809 were obtained with this gauge. The gauge No. 2, the products of which I now prefer to register, is placed on a grass plot, about seventy feet from the west front of the house. Their difference in elevation is about forty-three feet.

It appears, from the total result of these observations, that about *one fourth* of the rain which fell in twenty days was formed *within fifty feet of the earth's surface.*

In attending to the manner in which the rains fell, the cause of the frequent difference in the products of the gauges was, at times, obvious. When they were alike, the abundance and active appearance of the clouds in the higher atmosphere, together with the transparency of the lower, indicated that the whole supply might very well be derived from above. On the contrary, in several cases of excess in No. 2, the lower air was very turbid, showing that the decomposition of vapour was going on quite down to the surface of the earth: or, in other words, that the raining clouds, though not distinguishable as aggregates, to us who were enveloped in them, actually swept or rested upon that surface.

On the first day, when the products were 5..8, the mean temperature was lowered 5°, probably by the effect of the gentle easterly current, which decomposed the vapour near the surface. On the 28th of the Tenth month, when the results were large and equal, a southerly current appeared to prevail in the region of the clouds, with, probably, a NW wind above it; by which the vapour coming from the south was decomposed. This was accomplished at a distance from the earth, and the mean temperature was lowered 1°. These two cases may elucidate the phenomenon without a long train of reasoning.

If we admit that a portion of the atmosphere, contiguous to the earth's surface, may be so cooled by a superior portion moving in a different direction, or with a different velocity in the same, as to become filled with a fine mist, which is ultimately resolved into clouds and rain, we shall perceive, that a set of rain gauges, placed at various heights within this portion, ought to collect less and less rain, as we ascend; since each stratum of air *deposits* its own redundant water, and *transmits* that of the higher ones.

But if the source of the rain be in a middle current, the lower part of which is above all the gauges, they ought all to afford like quantities; unless, indeed, the lower air be so dry, at the same time, as somewhat to lessen the bulk of each drop by evaporation; in which case (as is said to have happened ~~in some~~ instances) the products will be found *larger* as we ascend.

But there is another source of discordant results, which seems not to have been enough attended to. It exists in the deflection of the rain by accidental currents. On the 25th of the Ninth month, finding in the gauge No. 2, 0·46 of an inch, while No. 1 had only 0·12 of an inch, I suspected that the wind, which came in squalls from the W, had a share in producing the difference. I took, therefore, two other gauges, No. 3 and No. 4; and on the 27th, placed No. 3 in the gutter, near and on a level with the W parapet of the house; and No. 4 about twenty feet in a line to leeward, at the same height, but in the valley between the roofs. It was then beginning ro rain in moderately large drops; the wind fresh at SW. After two hours and a half, I found in No. 3, 0·08, and in No. 4, 0·11 of an inch; No. 2, on the ground, having also 0·11 of an inch. I removed No. 4 about forty feet to leeward, near the E parapet, and got in an hour and a quarter from No. 1, 0·08, No. 2, 0·15, No. 3, 0·12. No. 4, 0·14 of an inch. The rain continued six hours, with a steady wind, and was at times heavy: near twice as much fell on the ground gauge as on that at the turret: and the results of the other gauges proved, that some part of the difference must be attributed to the wind between these. For it appears, that the stream of air, obstructed by the W front of the house, (which has a contiguous building fronting S,) and rising in a curve, carried with it a part of the rain over the windward gauge, to let it fall on the leeward; hence the latter had more than its due proportion, the former less.

Thus *rain may be drifted as well as snow:* and it will be found difficult to affix a gauge to any part of a building, so that its products shall not be affected by partial currents, diminishing or overcharging them; and allowance must doubtless be made in the results of the foregoing table for this source of error.

On the whole, as the proper subject of calculation and comparison is the rain on the surface of the ground, *this* is the proper ordinary situation for the gauge; and it should be as remote as possible from all objects that may give rise to eddies in the stream flowing over it. As a further defence, both from these and from sudden frosts, the bottle into which the rain enters from the funnel, should be placed in a box, sunk in the ground; above which there should be a cavity sufficiently large to contain the funnel, with its mouth a little above the ground, and a free space of a few inches round it: the whole being laid with turf, both to keep it neat, and to break the spray in heavy showers. A grass plot in a garden affords the greatest facility for this arrangement: and the instrument thus placed is scarcely discoverable from a moderate distance.—L. H.

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ERUPTION OF ÆTNA.

An eruption of Mount Ætna took place on the 27th of October. On the same day a great quantity of very fine pulverized cinders fell in Messina, a distance of fifty or sixty miles; and some were carried to a much greater distance.

EFFECTS OF LIGHTNING ON TIMBER.

An instance of the remarkable effects of lightning occurred October 28, at 6 a.m. at Berkeley, near Frome. A single flash only was seen, followed almost instantly by a tremendous clap of thunder, and attended with a heavy storm of rain and hail: it struck two oaks at a short distance from the front of Berkeley-house, one of which was completely shivered to pieces, and even in some measure rooted up: every limb, twisted and torn in various ways, was blown off; fragments and splinters, from a very small to a very large size, were scattered about to the distance of sixty or seventy yards.

METEOR.

November 7.—At a quarter before 9 p.m. a splendid meteor illumined the visible horizon of the metropolis. It appeared above the loose clouds, through which Jupiter was scarcely perceptible, and passed over an extent of about 60° in the third of a minute. Its greatest altitude, when first distinguished, was about 18 or 20°, and it disappeared in the NNE part of the horizon. Its diameter was about the sixth of a degree, its mass compact, its light dense, and the colour on the ground and among the clouds was blue, such as is produced by the combustion of Roman candles. Its whole appearance was that of a magnificent rocket.

Whitehaven.—On November 15, we were visited by one of the most awful tempests that has been witnessed here since the memorable month of January, 1796. Fortunately the tides were much lower, last week, than they were at the period alluded to; but the wind was far more violent than at that time, and from NNW, with little variation.—(PAPERS.)

TABLE LXV.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1st mo. Jan. 6	NW	29·77	29·68	38°	31°	37°	31°	4	
7	N	30·05	29·68	38	33	36	31	—	19
8	NW	30·19	30·05	37	26			—	
9	NW	30·18	30·10	37	31	35	27	—	
10	Var.	30·18	30·13	36	32	34	32	—	12
11	N	30·13	29·89	38	32	37	32	—	25
12	N	29·89	29·79	42	32	39	33	—	
13	NW	29·98	29·79	40	35	38	34	—	1
14	NW	30·08	29·98	41	33	40	35	14	
15	W	30·18	30·08	45	28	43	31	—	
16	W	30·20	30·17	39	32	39	33	—	
17	N	30·25	30·20	38	31	38	34	—	
18	W	30·25	30·15	43	34	43	35	—	5
19	SW	30·15	29·97	47	36	47	37	—	3
20	NW	29·97	29·88	43	29	40	29	—	
21	NW	29·88	29·86	40	28	35	30	33	
22	NW	29·96	29·86	41	31	35	32	—	
23	NE	30·08	29·96	34	31	33	30	—	
24	NW	30·10	30·06	39	27	37	28	—	
25	W	30·06	30·00	41	39	42	37	—	3
26	S	30·07	30·05	45	31	44	31	—	
27	SW	30·05	29·87	47	31			28	
28	Var.	29·87	29·46	46	36	48	37	—	
29	SE	29·34	29·28	45	40	45	42	—	12
30	S	29·79	29·34	50	33	55	34	—	24
31	SE	29·79	29·79	48	41	54	36	29	10
2d mo. Feb. 1	SE	29·69	29·67	47	42	47	41	—	4
2	SE	29·64	29·34	50	40	48	41	—	8
3	SE	29·69	29·45	47	42	47	43	—	2
4	SW	29·58	29·45	49	42	52	45	32	1
		30·25	29·28	50	26			1·40	1·29

Notes.—First Mo. 6. Very fine morning: wet evening: the night stormy with much snow. 7. Snowy morning, stormy day. 9. Snow fell through the night, to about three inches depth. 10. Little wind, changing to SW: a thaw. London was this day involved, for several hours, in palpable darkness. The shops, offices, &c. were necessarily lighted up; but the streets not being lighted as at night, it required no small care in the passenger to find his way, and avoid accidents. The sky, where any light pervaded it, showed the aspect of bronze. Such is, occasionally, the effect of the accumulation of smoke between two opposite gentle currents, or by means of a misty calm. I am informed that the fuliginous cloud was visible, in this instance, from a distance of forty miles. Were it not for the extreme mobility of our atmosphere, this volcano of a hundred thousand mouths would, in winter, be scarcely habitable! 16. A dripping mist. 18. Misty morning. 19. Very cloudy: large lunar halo: stormy night. 22. Snowy evening. 23, 24. Lnnar halo. 28. Windy night. 29. Windy morning: wet evening.

Second Mo. 2. Gloomy, with small rain at intervals. About half past 7 p. m. the wind rose, and blew furiously from E and SE for about an hour and a half, the barometer falling a quarter of an inch: after abating the wind rose again, and the night was stormy.

Notes T. F.'s *Journal, Clapton, January* 21. Some *Cirri:* fair day. 22. Cloudy. 23. Fair. 24. Cloudy: fair: a fine coloured halo observed at Walthamstow. 25. Foggy: calm. 26. Foggy: then clear sky and misty horizon. 27. Hazy morning, windy night: corona, followed by halo. 29. *Cirri,* much coloured before sunrise 30. Sun and mist: showers. 31. Cloudy, calm, and hazy.

February 1. Fair: much cloud. 2. Fair: *Cirrocumuli* and *Cumuli.*

RESULTS.

Winds from the N and W to the time of Full Moon, then from the Eastward.

Barometer:	Greatest height	30·25 in.
	Least	29·28 in.
	Mean of the period	29·899 in.
Thermometer:	Greatest height	50°
	Least	26°
	Mean of the period	38° [Lab^{r}· 38·01°]
Evaporation		1·40 in.
Rain (including the products of snow)		1·29 in.

TABLE LXVI.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2d mo. Feb. 5	SE	29·58	29·54	47°	41°	46°	40°	—	59
6	NW	29·86	29·54	47	35	48	35	—	1
7	W	29·86	29·70	47	37	47	35	—	11
8	NW	29·96	29·86	41	36	42	34	28	10
9	N	29·98	29·95	43	38	46	37	—	
10	E	29·97	29·87	45	26	43	28	—	
11	E	29·87	29·60	48	33	48	39	—	2
12	S	29·54	29·45	50	39	49	38	—	4
13	W	29·77	29·59	44	38	48	34	—	10
14	Var.	29·65	29·48	48	39	50	24	—	24
15	NW	29·69	29·65	47	41	48	40	48	5
16	NW	29·75	29·66	49	45	52	43	—	14
17	W	29·80	29·46	50	40	52	40	—	2
18	NW	30·06	29·80	46	38	48	35	—	
19	S	30 06	29·97	53	34	50	33	—	
20	S	29·97	29·84	54	42	54	40	—	
21	S	29·84	29·58	54	43	54	42	—	28
22	Var.	29·59	29·55	50	41	54	41	55	32
23	NW	29·75	29·49	50	31	52	32	—	1.08
24	NW	29·95	29·76	44	34	47	33	—	
25	S	29·40	29·30	44	32	45	31	—	12
26	Var.	29·76	29·40	42	30	46	28	—	
27	Var.	29·76	29·70	50	31	44	29	—	6
28	S	29·70	29·65	47	31	49	30	—	1
29	E	29·65	29·55	48	37	49	37	67	3
3d mo. March 1	E	29·85	29·65	48	33			—	
2	NW	29 97	29·90	46	25			—	1
3	E	29·90	29·86	44	38			—	22
4	SW	29·87	29·80	52	35			—	3
5	Var.	30·04	29·75	47	36			30	13
		30·06	29·30	54	25			2·28	3·71

Notes.—Second Mo. 8. Rainy evening. 10. clear p. m.: a fine blush on the evening twilight. 11. Hoar frost. 12. Stormy night. 14. Rainy morning: very stormy day. 16. Wind boisterous all night, with rain. 17. Stormy night. 20. A very fine day: lunar halo at night. 21. Cloudy: a heavy shower of hail about half-past 9 p. m.; night stormy. 22. About 9 a. m. came on a great storm of wind and rain, mixed with hail, which continued about an hour: on its ceasing, the clouds dispersed and the wind changed to W. About noon it became again stormy, continuing so at intervals till half-past four, when it began to hail with great violence; this was followed by rain, and during the storm there were frequent flashes of lightning and some distant thunder. 23. Cloudy: a large lunar halo: wind high in the night with rain. 24. Very stormy morning: heavy rain about 3 a. m. with the wind very strong from NW. In an hour after, snow and sleet, with a freezing air: clear evening: the moon bright. 25. Very stormy. 27, 28. Hoar frost. 29. Misty morning.

Third Mo. 2. Fine, with occasional clouds. 3. Hoar frost: night rainy. 4 Wet morning. 5. Wet night.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·06 in.
	Least	29·30 in.
	Mean of the period	29·738 in.
Thermometer:	Greatest height	54°
	Least	25°
	Mean of the period	41·73°
Evaporation		2·28 in.
Rain		3·71 in.

The temperature is that of the Laboratory: the thermometer in the usual place is, here, No. 2.

THUNDER STORMS.

February 22, p. m.—The neighbourhood of Windsor was visited with a most dreadful storm, accompanied with vivid flashes of lightning, and very loud claps of thunder.

Plymouth, February 24, 2 p. m.—There has been so dreadful a storm of thunder, lightning, and hail, for these two hours past, as has not been seen or heard in this port for a series of years.

Thunder storms were very generally experienced throughout *France* in February, and besides occasioning the loss of many lives, damaged many public buildings, houses, &c. On the night of the 23rd, three vessels in L'Orient were sunk by thunder-bolts.—The church of St. Pelerin, department of the Loire, was, on the 22nd of February, struck by lightning, and burnt to the ground before the flames could be extinguished.

EARTHQUAKES IN NORTH AMERICA.

The American Papers abound with accounts of the recent earthquakes that have been experienced in different parts of the United States, (as it appears, in the month of December, and again in February.) Several islands in the Missisippi had totally disappeared, and the banks on both sides of that immense river had fallen in, to a prodigious extent.—(PAPERS.)

TABLE LXVII.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3rd mo. Mar. 6	SW	29·88	29·84	56°	41°			—	
7	NW	29·87	29·66	57	35			12	18
8	NW	30·19	29·87	50	31			—	3
9	NE	30·26	30·19	46	33			—	
10	NE	30·26	30·20	44	30			—	
11	NE	30·20	30·20	46	33			—	
12	NW	30·20	29·96	44	34			—	12
13	NE	29·99	29·96	45	34			—	6
14	NE	29·99	29·87	44	26			—	4
15	NE	29·87	29·76	42	31			48	1
16	NE	29·77	29·75	35	31			—	
17	NE	29·75	29·66	36	29			—	
18	NE	29·66	29·40	39	26			—	
19	E	29·40	29·30	39	29			—	14
20	SW	29·24	29·10	50	40			—	8
21	SE	29·54	29·24	54	39			30	18
22	NE	29·74	29·54	53	39			—	2
23	SE	29·74	29·27	42	40			—	67
24	NW	29·64	29·27	40	32			—	16
25	NE	30·27	29·64	42	24			—	1
26	SE	30·35	30·17	46	30			—	
27	SE	30·20	29·46	51	41			36	16
28	S	29·42	29·25	53	49			—	—
29	SW	29·48	29·36	58	48			—	46
30	SW	29·78	29·48	59	40			30	12
31	E	29·53	29·48	47	40			—	10
4th mo. April 1	Var.	29·64	29·59	58	41			18	—
2		29·70	29·58	—	—			—	—
3		29·68	29·58	55	43			17	26
		30·35	29·10	59	24			1·91	2·80

NOTES.—Third Mo. 9. A shower of hail p. m. 11. Hoar frost. 15. Frosty morning. 16. Wind very strong from NE all day. 17. Cold wind. 20. Snow in the morning, followed by rain. 22. Very wet night; high wind. 25. Snow: the barometer rising rapidly. 26. Very fine a. m.: barometer still rising. 27. Cloudy a. m.: a considerable depression of the barometer, with appearances indicating thunder. Late at night a shower of hail, with lightning. 28. Stormy with showers. 29. Windy a. m.: at 2h. 30m. p. m., the temperature without being 54°, I found the vapour point in a room as high as 61°. In an hour after this it began to rain steadily, and there fell near half an inch in depth. 30. Much wind at intervals, changing to E. 31. Stormy from E and SE: cloudy: about 9 p. m. an extensive appearance of light in the clouds to the W, with rapid coruscations passing through them, in the manner of an aurora borealis. This phenomenon was apparently not more elevated than the clouds which then overspread the sky, and was certainly not produced by the reflection of a light situate below them: it continued twenty or thirty minutes.

RESULTS.

Prevailing Winds Easterly.

Barometer:	Greatest height	30·35 in.
	Least	29·10 in.
	Mean of the period	29·739 in.
Thermometer [Lab$^{y.}$]:	Greatest height	59°
	Least	24°
	Mean of the period	41·5°
Evaporation		1·91 in.
Rain		2·80 in.

PARHELIA.

On the 9th March, was seen at Carlisle, the beautiful phenomenon of two *parhelia*, or mock suns, in the heavens. They were first observed about ten o'clock, and appeared of variable brightness until near twelve, when they vanished.

STORMS, SNOW, &c.

In consequence of the great inclemency of the weather, the mail due on the 21st March, from the north of Scotland, had not arrived at Edinburgh, nor the Glasgow at Carlisle.

Between Appleby and Brough, the snow had so much drifted as to make the road impassable for a coach.

Between Sheffield and Manchester, and Bradford and Halifax, the snow had drifted from two to three yards deep.—The mails have been also greatly impeded in South Wales; the snow and the floods having made the roads impassable.

Plymouth, March 21.—It blew a most tremendous gale from SW the whole of last night and this morning.

Hull.—On Friday, March 20, we experienced a most tremendous gale throughout the day and night; accompanied with heavy showers of snow and sleet. The account from the coast of the effects of the gale are highly disastrous. *During the storm, the wind to the southward of the Humber, was from the SW, whilst to the northward it was strong from the NE and by E.*

COLD IN ITALY, &c.

The cold has been more severe in Italy this winter than for many preceding ones. At Venice, Turin, Naples, &c. the thermometer, placed in the sun, was in January 3° below the freezing point. In the southern parts of Germany the winter has been extremely severe, while in the north it has been very moderate.—(PUB. LEDGER.)

EARTHQUAKE IN SOUTH AMERICA.

A supplement to the St. Thomas's Gazette, of the 9th of April, contains the following particulars of this dreadful catastrophe.

The 26th of March has been a day of woe and horror to the province of Venezuela. At 4 p. m. the city of Caraccas stood in all its splendour—a few minutes later, four thousand five hundred houses, nineteen churches and convents, together with all other public buildings, monuments, &c. were crushed by a sudden shock of an earthquake. That day happening to be Holy or Maundy Thursday, and at that precise hour every place of worship being crowded, to commemorate the commencement of our Saviour's Passion, by public processions, which were to proceed through the streets a few minutes afterwards, it augmented the number of sufferers to an incredible amount, as every church was levelled with the ground before any person could be aware of danger. The number taken out of one church amounting (two days after the disaster) to upwards of three hundred corpses, besides those (it may be presumed) that could not yet have been dug out of such heaps of ruins, gives an idea of the extent of the calamity. The number of dead are differently stated, from four to six, as far as eight thousand. Horrible as this catastrophe appears, it would be matter of some consolation to know that the vicinity of that city offered some support or shelter to the surviving mourners, but the next town and sea-port thereto, *viz.* La Guayra, has in proportion suffered still more; and that appears to have been the case along its immediate coast; huge masses of the mountains have been detached from the summits and hurled down into the vallies. Deep clefts and separations of the immense beds of rocks still threaten future disasters to the hapless survivors, who are now occupied to bury and burn the dead, and to relieve the numerous maimed, perishing for want of medical aid, shelter, and other comforts.

It appears, by authentic accounts, that several other cities and towns had suffered by the earthquake which destroyed Caraccas and La Guayra:—Cumana, New Barcelona, and Valencia, are nearly destroyed; Barquisimeto, Santa Rosa, and Caudare, totally destroyed; Arilaqua, sunk; and the inland town of St. Philip, with a population of one thousand two hundred souls, entirely swallowed up.—(PAPERS.)

The writer of a letter inserted in the public papers, (dated from Jocame, two leagues from Caraccas, March 31,) gives the following account of the state of the atmosphere at the time. "My first idea (on feeling the shock, which is stated to have lasted about fifteen seconds) was that the Silla, a mountain near Caraccas, had broken out into a volcano: but its peak, like all the surrounding hills, was unusually clear: nor had there been any sultry weather or violent winds:—on the contrary, the weather has long been and still continues to be, warm without being sultry; though without rain for a considerable time, except now and then a few drops—and with heavy night dews."

I may remark on the preceding statement, that probably it would have been happy for the city of Caraccas, had a volcano opened in its neighbourhood at this time. The celebrated *Humboldt,* whose opportunities of observing these phenomena have been most extensive, is clearly of opinion, that one and the same cause, deeply seated in the globe, produces both *earthquakes* and *volcanic eruptions:* he seems moreover to regard volcanoes as the *spiracula* through which the elastic vapours, occasionally disengaged in the bowels of the earth, find a vent into the atmosphere, without displacing the superincumbent strata. He considers the eruption in the island of St. Vincent, (for which see the Notes under next Table,) as affording one example of this connexion; as it began only thirty-four days after the present earthquake, and was long preceded by shocks, which were felt at the same time on the South American continent.

"We learned, says Humboldt, at Pasto, (120 miles N of Quito,) that a column of thick black smoke, which for several months in 1797 had been issuing from the volcano near that city, disappeared *at the very hour* when the cities of Riobamba, Hambato, and Tacunga were overthrown by an enormous shock, sixty leagues to the south of the volcano."—Voyage au Nouveau Continent: *Relation Historique, livre 2, chap.* iv. which see throughout on the subject.

Supposing the prime agent in these phenomena to be *water,* penetrating to unusual depths through the inclined strata of mountainous countries, and thus meeting with masses of the highly oxidable bases of the earths (for instance) which have not before undergone its action, there will then appear to be a close connexion between the recurrence of these effects and the variations of the atmosphere. For the most probable cause of such penetration, (though not the only assignable one,) is excessive and continued *rain;* and this, not necessarily on the district which is the immediate seat of the earthquake or eruption, but rather on some neighbouring mountainous tract, which by its position may be capable of collecting, and transmitting through subterraneous communications the requisite excess of water. Now the want of rain " for a considerable time," at Caraccas, not only consists with, but even renders probable, an excess of it for the same period, in the more inland and elevated country.

TABLE LXVIII.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 4th mo. April 4	E	30·10	29·60	53°	36°			—	
5	S	30·18	30·10	56	35			—	4
6	S	30·10	29·93	53	42			25	
7	E	30·02	29·88	50	37	54°	38°	—	10
8	NE	30·15	30·02	49	25	48	27	—	
9	NE	30·15	30·01	43	33	42	34	—	
10	NE	30·01	29·98	47	36	47	37	—	
11	W	29·98	29·89	44	37	45	39	43	
12	NE	30·05	29·89	52	32	53	32	—	
13	NE	30·05	30·05	51	33	52	35	—	
14	NE	30·05	29·91	51	32	53	34	—	
15	NE	29·91	29·73	53	30	58	32	—	
16	N	29·73	29·64	49	27	50	28	—	—
17	N	29·83	29·64	48	28	47	28	—	—
18	N	30·09	29·83	51	29	49	28	87	
19	Var.	30·09	30·02	50	33	51	36	—	
20	NW	30·15	30·00	58	30	54	32	—	—
21	NE	30·15	30·07	58	37	53	40	28	
22	N	30·01	29·97	54	30	52	31	—	
23	—	—	—	52	32	49	34	—	
24	W	29·94	29·86	52	36	49	37	—	
25	SW	29·86	29·56	54	39	58	41	—	—
26	Var.	29·65	29·55	49	34	51	31	69	47
27	NE	29·64	29·59	52	44	53	44	—	6
28	NE	29·76	29·64	51	44	53	45	—	14
29	NE	29·80	29·76	52	43	56	44	27	39
30	Var.	30·02	29·80	55	45	56	45	—	—
5th mo. May 1	E	30·02	29·92	59	43	55	45	—	—
2	NE	29·92	29·73	54	42	57	42	—	—
3	Var.	29·75	29·70	56	32	57	34	55	4
		30·18	29·55	59	25			3·34	1.24

NOTES.—Fourth Mo. 4. Cloudy a. m.: clear evening. 5. Much dew: barometer unsteady: heavy clouds through the day: a shower about sunset. 6. Much dew: grey sky, and the air nearly calm. 7. Lightly clouded: little wind. 8. Cloudy a. m: a shower p. m. 9. Brisk wind: cloudy. 10. Hoar frost. 11. Cloudy. 16. Slight showers. The *Cumulostratus* cloud has prevailed every day for a week past. 17. A little hail. 20. A few large drops. 23, 24. Occasional slight showers of hail, &c. 25. A rainy night. 26. Gentle showers of rain, yet not warm. 27. Misty morning: much dew: *swallows appear*. 28, 29. Cloudy: windy.

Fifth Mo. 1, 2. Cloudy: the cuckoo heard. 3. About 1 p.m. a few drops of rain, attended with the smell of electricity in the air: the wind, which in the morning had been brisk at NE, died away, the canopy of the sky rose: the evening was calm, and dew fell.

RESULTS.

Prevailing Wind NE.

Barometer:	Greatest height	30·18 in.
	Least	29·55 in.
	Mean of the period	29·902 in.
Thermometer:	Greatest height	59°
	Least	25°
	Mean of the period	43·57° [Lab^{y}· 43·98°]
Evaporation		3·34 in.
Rain		1·24 in.

It appears that a shower of *Meteoric Stones*, accompanied with the usual flashes and detonations, fell on the 10th of the Fourth month, about 8 p. m., at six leagues distance from *Toulouse.*

Eruption of the Soufrière Mountain, St. Vincent's.

A letter of the 6th of May furnishes the following interesting particulars of this awful phenomenon:—"The Soufrière Mountain," says the writer, "had for some time past indicated much disquietude; and from the extraordinary frequency and violence of earthquakes, which are calculated to have exceeded two hundred within the last year, portended some great movement or eruption. The apprehension, however, was not so immediate as to restrain curiosity, or to prevent repeated visits to the crater, which of late had been more numerous than at any former period, even up to Sunday, April 26; when some gentlemen ascended it, and remained there for some time. Nothing unusual was then remarked, or any external difference observed, except rather a stronger emission of smoke, from the interstices of the conical hill at the bottom of the crater. About two thousand feet from the level of the sea, (calculating from conjecture,) on the south side of the mountain, and rather more than two-thirds of its height, opens a circular chasm, somewhat exceeding half a mile in diameter, and between four and five hundred feet in depth: exactly in the centre of this capacious bowl, rose a conical hill about two hundred and sixty or three hundred feet in height, and two hundred in diameter, richly covered and variegated with shrubs, brushwood, and vines, above half way up; and, for the remainder, powdered over with virgin sulphur to the top. From the fissures in the cone, and interstices of the rocks, a thin white smoke was constantly emitted, occasionally tinged with a slight bluish flame. The precipitous sides of this magnificent amphitheatre were fringed with various evergreens and aromatic shrubs, flowers, and many Alpine plants. On the north and south sides of the base of the cone were two pieces of water, one perfectly pure and tasteless, the other strongly impregnated with sulphur and alum.

"A century had now elapsed since the last convulsion of the mountain, or since any other elements had disturbed the serenity of this wilderness than those which are common to the tropical tempest. It apparently slumbered in primeval solitude and tranquillity; and from the luxuriant vegetation and growth of the forest which covered its sides from the base nearly to the summit, seemed to discountenance the fact, and falsify the records of the ancient volcano. Such was the majestic, peaceful Soufrière on April the 27th; but we trod on, '*ignes suppositos cineri doloso*,' and our imaginary safety was soon to be confounded by the sudden danger of devastation. Just as the plantation bells rang twelve at noon, on Monday the 27th, an abrupt and dreadful crash from the mountain, with a severe concussion of the earth, and tremulous noise in the air, alarmed all around it. The resurrection of this fiery furnace was proclaimed in a moment by a vast column of thick black ropey smoke, like that of an immense glass house, bursting forth at once, and mounting to the sky: showering down sand, with gritty calcined particles of earth and favilla mixed, on all below. This, driven before the wind towards Wallibon and Morne Ronde, darkened the air like a cataract of rain, and covered the ridges, woods, and cane pieces with light grey-coloured ashes, resembling snow when slightly dusted. As the eruption increased, this continual shower expanded, destroying every appearance of vegetation. At night a very considerable degree of ignition was observed on the lips of the crater; but it is not asserted that there was as yet any visible ascension of flame. The same awful scene presented itself on Tuesday; the favilla and calcined pebbles still increasing, and the compact pitchy columns from the crater rising perpendicularly to an immense height, with a noise at intervals like the muttering of distant thunder. On Wednesday the 29th, all these menacing symptoms of horror and combustion still gathered more thick and terrific, for miles around the dismal and half-obscured mountain. The prodigious column shot up with quick motion, dilating as it rose like a balloon. The sun appeared in total eclipse, and shed a meridian twilight over us, that aggravated the wintry gloom of the scene, now completely powdered over with falling particles. It was evident that the crisis was yet to come—that the burning fluid was struggling for vent, and labouring to throw off the superincumbent strata, and obstructions which suppressed the ignivomous torrent. At night it was manifest that it had greatly disengaged itself from its burden, by the appearance of fire flashing now and then, flaking above the mouth of the crater.

"On Thursday, the memorable 30th of April, the reflexion of the rising sun on this majestic body of curling vapour was sublime beyond imagination—any comparison of the Glaciers of the Andes, or Cordilleras with it, can but feebly convey an idea of the fleecy whiteness and brilliancy of this awful column of intermingled and wreathed smoke and clouds: it afterwards assumed a more sulphureous cast, like what we call thunder-clouds, and in the course of the day a ferruginous and sanguine appearance, with much livelier action in the ascent, a more extensive dilatation, as if almost freed from every obstruction. In the afternoon the noise was incessant, and resembled the approach of thunder still nearer and nearer, with a vibration that affected the feelings and hearing: as yet there was no convulsive motion, or sensible earthquake.—Terror and consternation now seized all beholders.—The Charaibs, settled at Morne Ronde, at the foot of the Soufrière, abandoned their houses, with their live stock and every thing they possessed, and fled precipitately towards town. The Negroes ecame confused, forsook their work, looked up to the mountain, and, as it shook, trembled, with the dread of what they could neither understand nor describe—the birds fell to the ground, overpowered with showers of favilla, unable to keep themselves on the wing; the cattle were starving for want of food, as not a blade of grass or a leaf was now to be found—the sea was much discoloured, but in nowise uncommonly agitated; and it is remarkable, that throughout the whole of this violent disturbance of the earth, *it* continued quite passive, and did not at any time sympathize with the agitation of the land. About 4 p. m. the noise became more alarming, and just before sunset the clouds reflected a bright copper colour, suffused with fire. Scarcely had the day closed, when the flame burst at length pyramidically from the crater, through the mass of smoke; the rolling of the thunder became more awful and deafening; electric flashes quickly succeeded, attended with loud claps; and now, indeed, the hurlyburly began. Those only who have witnessed such a sight, can form any idea of the magnificence and variety of the lightning and electric flashes; some forked, zigzag, playing across the perpendicular column from the crater—others shooting upward from the mouth like rockets of the most dazzling lustre—others like shells with their trailing fuses flying in different parabolas, with the most vivid scintillations from the dark sanguine column, which now seemed inflexible, and immovable by the wind. Shortly after 7 p. m. the mighty caldron was seen to simmer, and the ebullition of lava to break out on the NW side. This, immediately after boiling over the orifice, and flowing a short way, was opposed by the acclivity of a higher point of land, over which it was impelled by the immense tide of liquid fire that drove it on, forming the letter V in grand illumination. Sometimes, when the ebullition slackened, or was insufficient to urge it over the obstructing hill, it recoiled back, like a refluent billow from the rock, and then again rushed forward, impelled by fresh supplies, and scaling every obstacle, carried rocks and woods together in its course, down the slope of the mountain, until it precipitated itself down some vast ravine, concealed from our sight by the intervening ridges of Morne Ronde. Vast globular bodies of fire were seen projected from the fiery furnace, and bursting, fell back into it, or over it, on the surrounding bushes, which were instantly set in flames. About four hours from the lava boiling over the crater, it reached the sea, as we could observe from the reflection of the fire, and the electric flashes attending it. About half-past one, another stream of lava was seen descending to the eastward, towards Rabacca. The thundering noise of the mountain, and the vibration of sound that had been so formidable hitherto, now mingled in the sullen monotonous roar of the rolling lava, became so terrible, that dismay was almost turned to despair. At this time the first earthquake was felt: this was followed by showers of cinders, that fell with the hissing noise of hail during two hours.

"At three o'clock, a rolling on the roofs of the houses indicated a fall of stones, which soon thickened, and at length descended in a rain of mingled fire, that threatened at once the fate of Pompeii, or Herculaneum. The crackling and coruscations from the crater at this period exceeded all that had yet passed. The eyes were struck with momentary blindness, and the ears stunned with the glomeration of sounds."—Another letter says, "The stones that fell were as light as pumice, though in some places as large as a man's head. This dreadful rain of stones and fire lasted upwards of an hour, and was again succeeded by cinders from three till six o'clock in the morning. Earthquake followed earthquake almost momentarily, or rather the whole of this part of the island was in a state of continual vacillation. The break of day, if such it could

be called, was truly terrific—a chaotic gloom enveloped the mountain, and an impenetrable haze, with black sluggish clouds hung over the sea. The whole island was covered with favilla, cinders, scoriæ, and broken masses of volcanic matter. It was not until the afternoon that the muttering noise of the mountain sunk gradually into a solemn silence."

The mountain continued to be agitated up to the 7th, when its more violent paroxysms gradually subsided; and it has since (to May 18) shown scarcely any signs of commotion. By this dreadful calamity, the large rivers of Rabacca and Wallibon were dried (or choked) up, and in their places was a wide expanse of barren sand. The melted minerals had formed a promontory which jutted out some distance from the main land, close to the post at Morne Ronde. The quantity of matter discharged from the crater is supposed to exceed twenty times the original bulk of this immense mountain. The soil, in many places, would be rendered incapable of vegetation. The extent of the planters' losses had not been ascertained; but it was thought to be very great.

Barbadoes.—The following extracts relate to the fall of the volcanic matter on that island. "I was lying in bed about six o'clock in the morning, (May 1,) when I observed my chamber more dark than usual. (Another account states, that the atmosphere at *four* was light and clear.) Some time after I arose and opened one of my windows, when I observed *to the north a dark thick cloud*, similar to the usual indications of a great deal of rain, (which would have been very acceptable,) but at the same time I perceived a most remarkable *bright cloud to the southward*, so much so, as to reflect light on the houses. We had had what we conceived to be several rolling claps of thunder during the night, and the last was a quarter past seven, [a. m.] when an instantaneous total darkness ensued, and from that time till one o'clock I never saw so dreadful a phenomenon. During the time of the darkness we were assailed by immense falls of calcareous matter (as I think) to such a degree that it was dangerous to go out of the house. At first, what fell was a large black substance, very coarse; but it gradually became as fine as Scotch snuff, and in a few hours the streets and the tops of the houses were many inches thick in this matter. About half-past one o'clock, a small glimmering of light began to appear, and by half-past two o'clock we could make out people in the streets. About half-past six last night, we saw like rays of fire in the southern quarter again. The whole island is in one complete sheet of this matter; the canes are all weighed down with it, and the poor cattle and horses must die for want, if we are not immediately relieved. We cannot see twenty yards before us for the immense volumes continually falling from off the tops of the houses; for so soon as it is dry, it is exactly like flour."

A letter of the 5th, says:—"We learn, by arrivals, that the explosion has not taken place at Dominica, St. Lucia, or Martinique. The Neptune arrived this morning from *Bristol*. Capt. Powers says, *he met with the volcanic matter five hundred miles to the windward of the island;* in that case, it is likely to be from the Western Islands.—(PAPERS.)

St. Vincent's (an island about seventeen miles long, by ten broad) lies twenty leagues west of Barbadoes. The distance to which the *favilla* of this eruption was carried, and that in vast quantities, is truly astonishing. It reached Barbadoes about six in the morning on the fifth day of the eruption, and approached as it seems *from the northward;* from which circumstance, as well as from its having been met with far in the Atlantic by a ship from Europe, the Barbadians might very well imagine it came from the *Azores.* The facts are explicable on the supposition that this matter was raised by the force of the explosion, as well as by the ascending heated column of air, quite into the superior current, which returns from the Equator to the Tropic, above the Trade wind: for *the latter,* blowing from Barbadoes past St. Vincent's, must have carried what was within its range towards *Grenada,* and we have no account of its even reaching that island, though nearer than Barbadoes to the volcano. By the superior current (which probably moves with a velocity unknown in the lower atmosphere) it was apparently carried over and beyond Barbadoes; where a part of it might appear at sun rise as a "bright cloud to the southward," and falling soon after into the Trade wind, continued to be brought back to the island in the ordinary direction of that wind, until the supply from the volcano ceased.

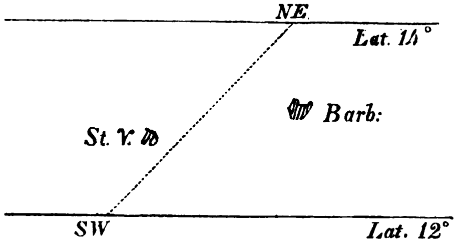

TABLE LXIX.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 5th mo. May 4	NE	29·86	29·78	63°	38°	61°	37°	—	
5	E	30·01	29·86	64	40	63	40	—	
6	E	30·01	29·98	60	42	64	43	—	
7	E	29·94	29·86	58	45	62	46	70	
8	SE	29·86	29·73	76	51	76	53	—	
9	SW	29·78	29·68	72	53	75	55	90	—
10	W	29·82	29·56	64	56	61	54	—	20
11	NW	29·56	29·54	65	49	67	50	—	2
12	SW	29·53	29·51	65	44	63	46	—	13
13	S	29·56	29·50	60	40	60	44	44	15
14	S	29·75	29·56	58	40	64	39	—	—
15	NE	29·95	29·75	57	43	58	44	—	10
16	N	30·00	29·95	62	45	63	45	36	2
17	NE	29·95	29·87	53	45	54	46	—	7
18	E	29·87	29·80	63	48	68	48	—	
19	E	29·80	29·63	66	53	70	55	—	44
20	SW	——	——	65	53	66	54	—	8
21	Var.	29·94	29·63	61	45	67	46	—	60
22	NW	30·18	29·98	52	35	52	38	—	
23	E	30·27	29·98	61	40	64	48	32	
24	SE	30·27	30·11	57	52	61	54	—	4
25	SW	30·11	29·98	62	53	66	54	—	
26	SW	29·98	29·55	72	55	77	56	43	
27	S	29·59	29·55	71	51	78	53	—	
28	SE	29·69	29·59	69	54	75	56	—	14
29	SW	29.84	29·69	72	53	76	54	—	23
30	S	29·76	29·74	67	52	78	54	65	
31	S	29·75	29·72	65	54	72	57	—	10
6th mo. June 1	SW	29·95	29·72	60	46	66	49	28	4
		30·27	29·50	76	35			4·08	2·36

NOTES.—Fifth Mo. 4, 5, 6. Much dew. 7. Windy. 8. Windy: *Cirrocumulus* and *Cumulostratus* · wind S above: thunder clouds: the evening twilight was luminous and coloured: the clouds dispersing, and scattered in loose flocks over the rich ground of the western sky, presented a striking appearance. 9. Shower very early: wind S, *Cirrus, Cirrocumulus:* evening, much wind. 10. Overcast a. m.: a gale from the W, with much cloud: showers: p. m. clear and pleasant. 11. A shower early: *Cumulostratus* prevails. 12. Showers. 13. A thunder shower, with hail about 3 p. m. 14. Showers. 15—17. Cloudy, windy. 18. Small rain a. m.: wind N, gentle: p. m. sunshine. 19. Wind

E a m. pretty strong: clouds of different kinds, with haze above: p. m. thunder clouds: in the evening came on a violent thunder storm, which lasted several hours; it was chiefly to the S and W. The appearances were very similar to those of the destructive hail storm, which occurred here in the same month, and on the same day of the month, and nearly at the same time of the day in 1809: sheets of blue and white lightning came in quick succession, with an almost continual rolling of thunder. We had however no hail, (being only on the flank of the storm,) but sudden and heavy showers of warm rain: which was of the same amount in the upper as in the lower gauge. At 11 p. m. wind NE, it still lightened far in the N. 20. Wind a. m. W, cloudy and misty. 23. About noon, during a shower, it thundered to the southward. 29. A little thunder to the SW about 4 p. m., with a few drops: wet night. 31. An electric shower about 9 a. m., *Nimbi:* windy night.

NOTES T. F.'s *Journal, Clapton.—May* 22. Cloudy morning, fair afternoon, with *Scud, Cumulus,* and *Cumulostratus.* 23. Various clouds in different heights. 24. Clouded sky with a little rain, a wavy, and in some places mottled appearance of the cloudy mass. 25. Small rain; fair evening. 26. Fine warm morning, *Cirrus,* &c., a sort of flying haze of a brownish colour here and there appeared in the afternoon. 27. Fine warm day and various clouds. 28. Clouds in two strata, some rain, fine sunset. 29. All the modifications appeared, and were followed by showers. 30. Some *Cirri* early, afternoon all the clouds were compact but rocky *Cumuli.* 31. Clouds in two strata, cloudy and rather windy by night.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·27 in.
	Least	29·50 in.
	Mean of the period	29·810 in.
Thermometer:	Greatest height	76°
	Least	35°
	Mean of the period	55·46° [Lab$^{y.}$ 57·67°]
Evaporation		4·08 in.
Rain		2·36 in.

TABLE LXX.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 6th mo. June 2		29·98	29·95	68°	53°	73°	54°	—	
3	NE	30·02	29·98	65	46	66	49	—	
4		30·04	30·00	72	50	74	49	38	
5	E	30·08	30·04	70	49	79	51	—	
6	NE	30·18	30·08	66	45	74	49	—	
7	NE	30·35	30·12	70	44	79	44	52	
8	NE	30·40	30·35	62	46	68	47	—	
9	N	30·40	30·15	66	51	70	51	—	
10	Var.	30·27	30·17	65	43	60	44	36	
11	NW	30·07	30 03	75	53	76	55	—	
12	NW	30·03	29·93	74	48	77	49	33	
13	SW	29·93	29·88	68	50	78	53	—	
14	SW	29·88	29·81	69	49	79	54	—	
15	SW	29·82	29·79	68	49	76	52	—	7
16	SW	29·79	29·58	65	48	73	52	—	23
17	SW	29·78	29·58	52	46	66	49	—	39
18	SW	29·58	29·49	59	53	64	56	—	40
19	SW	29·49	29·34	63	49	68	51	1·15	9
20	SW	29·53	29·33	60	46	66	48	—	21
21	SW	29·66	29·32	60	46	67	48	—	16
22	SW	29·83	29·66	60	43	66	46	37	1
23	W	29·94	29·81	62	46	68	49	—	5
24	SW	29·94	29·91	59	45	65	46	—	6
25	Var.	29·91	29·60	63	50	67	51	—	25
26	Var.	29·86	29·45	58	42	62	43	38	61
27	Var.	29·86	29·78	63	46	66	46	—	22
28	N	30·10	29·78	58	39	60	41	—	1
29	SW	30·03	29·96	64	48	66	50	—	
30	SW	29·86	29·70	62	52	65	54	60	5
		30·40	29·32	75	39			4·09	2·81

NOTES.—Sixth Mo. 3. A little rain at intervals. 4. A few large drops *Cumulostratus* p. m. A shower to the SW. Wind E. 5. Much dew: clear with *Cirrus*. 6. Overcast, windy: then very fine, with red *Cirri* at sunset. 7. Cloudy morning clear day afterward: brilliant orange twilight. 8. Cloudy: brisk wind. 9. Fair, with *Cumulus* and *Cirrus* above at sunset the wind rose, with some appearance of *Nimbus*. 10. *Cumulostratus*, with a cold breeze all day. 11. Wind fresh at W a. m.: the maximum of temperature occurred at nine: the barometer fluctuating. *Cumulus* clouds with very large plumose *Cirri* above, which showed red at sunset. The New Moon appeared
white crescent, becoming afterward of a gold colour) in the
of a pretty luminous twilight. 12. Cloudy a. m.: barometer

still unsettled: evening twilight luminous and orange coloured: a *Stratus* began to appear at 9 p.m. 13. Misty a.m.: much dew. 15. Cool day: rather windy. 16. Rain last night: fair and cool. 17. Heavy short showers. 18. Fair, cloudy: rain by night. 19. The rainbow *twice* this morning. 21. Several hours' rain a. m. Barometer fluctuating. 22. *Nimbi* a. m. fair p. m. 23. *Nimbi* through the day: thunder twice to the SW: the wind veered as far as to NW, but settled W. 24. Much cloud a.m.: calm air: showers. 25. *Cumulus,* with very elevated *Cirrus,* in parallel bands E and W. A solar halo for above two hours after noon, the higher atmosphere filled with cloud: at sunset the wind, which had been SE and SW, came to NW. 26. Cold stormy morning, wind N. Thunder twice about 2 p.m.: rain almost from sunrise to sunset. 27. Sunshine a.m.: wind NW: a solar halo p.m.: wind SW: evening wet and stormy. 28. Wind N a.m: a faint blush on the evening twilight. 30. Windy evening: rain at intervals.

RESULTS.

Winds Variable, the SW of longest continuance.

Barometer: Greatest height	30·40 in.
Least	29·32 in.
Mean of the period	29·881 in.
Thermometer: Greatest height . . .	75°
Least	39°
Mean of the period [See p. 191.]	55·87° [Lab^{y}· 59·46°]
Evaporation	4·09 in.
Rain	2·81 in.

THUNDER STORM.

June 21.—South End, in Essex, and the neighbourhood for several miles round, were visited by a severe storm of thunder and lightning, accompanied by a shower of hail stones of uncommon size.

ERUPTION OF VESUVIUS.

Naples, June 15.—Vesuvius, which had been quiet for several years, has suddenly broken out. At nine in the morning of the 12th, loud reports proceeded from the bosom of the mountain, followed by an eruption of cinders and smoke. After this the mountain remained quiet for an hour. At 11 two fresh reports were heard, when the crater vomited fire and smoke, which covered the horizon. On the 13th and 14th it was calm, but, at the instant we are writing, it is again in action, and its crater is covered with an immense column of smoke.

AGITATION OF THE SEA.

Marseilles, June, 24.—A singular phenomenon was witnessed here yesterday. On a sudden, a rush of water came from the sea into the port, forming a current so rapid that it drew every thing with it. The sea then retired all at once, leaving the harbour dry, and all the vessels aground. Almost at the same instant the sea returned by leaps and bounds, with extraordinary impetuosity, filling again the harbour, placing afloat the vessels, and inundating the quays. Afterwards every thing returned to its usual state.—(PAPERS.) See Notes of June 8, 1811, under *Table LVII.*

TABLE LXXI.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7th mo. July 1	SW	29·70	29·44	63°	52°	65°	54°	—	29
2	Var.	29·56	29·40	65	47	70	50	—	53
3	N	30·00	29·56	61	42	65	41	—	
4	SW	30·05	30·01	61	42	66	44	45	
5	SW	30·02	29·96	63	51	67	53	—	
6	NW	30·27	30·02	67	50	71	49	—	
7	N	30·29	30·27	72	51	76	50	43	
8	E	30·33	30·29	71	46	78	48		
9	NE	30·33	30·29	73	50	81	52		
10	N	30·39	30·29	72	51	75	51		
11	N	30·29	30·16	69	54	74	57		
12	NW	30·17	30·16	66	41	68	42		
13	NW	30·19	30·16	64	52	72	54		
14	Var.	30·19	30·17	64	46	74	50		4
15	Var.	30·17	30·05	69	50	72	53		1
16	E	30·05	29·95	65	55	71	57	—	
17	Var.	30·14	29·95	67	56	68	58	—	
18	SE	30·10	30·00	75	56	85	59	37	
19	SW	30·00	29·74	73	55	74	60	—	17
20	W	29·85	29·70	75	50	75	53	—	34
21	W	29·96	29·94	65	45	75	42	35	
22	SW	30·09	29·96	63	42	70	45	—	15
23	SW	30·09	29·94	65	52	71	55	—	
24	SW	29·94	29·78	62	58	72	61	—	26
25	SW	29·79	29·78	71	57	81	58	55	3
26	NW	29·85	29·79	68	49	72	52	—	
27	Var.	29·66	29·60	61	48	65	49	—	1·00
28	SW	29·66	29·65	64	50	68	50	—	
29	W	29·80	29·66	63	49			55	22
		30·39	29·40	75	41			2·70	3·04

Notes.—Seventh Mo. 1. Much wind: very cloudy: rain at intervals through the day and night. 2. Fair a. m.: thunder showers with hail, p. m. 3. Cloudy: a few drops of rain. 4. The wind veered adually from N by E to SW. 5. Wind moderate. 22. Thunder d hail.

Notes J. G.—*Stratford, July* 1. Rainy morning. 2. A shower of ge hail between 5 and 6 p. m., with some thunder: evening showery. Cloudy and fine: some rain in the evening. 12. Cloudy morning. me rain in the evening. 20. Some thunder in the afternoon lightning in the evening. 22. A heavy thunder storm about noon, accompanied with large hail. 27. Very rainy day. 29. A thunder storm about 3 p. m., with heavy rain mixed with hail.

RESULTS.

Winds variable.

Barometer:	Greatest height	30·39 in.
	Least	29·40 in.
	Mean of the period	29·975 in.
Thermometer:	Greatest height	75°
	Least	41°
	Mean of the period	58·34° [Lab^{y}· 61·72°]
Evaporation (in twenty-one days, the rest being lost by accident)		2·70 in.
Rain		3·04 in.

In travelling at different intervals during this month between London and Folkstone, I observed that the showers in great measure avoided the high chalky tracts, and followed the course of the rivers and moist valleys. The reverse distribution sometimes takes place.

Being on the heights above Folkstone, about 10 p. m. on the 14th of Seventh month, I observed a brilliant meteor dart down in the southern sky, tending a little E in its fall; during which it was of a bright blue, but at the moment of extinction it became red and seemed to explode.

It is observable that (with an exception of two wet days connected with previous wet weather) the rain of this and the preceding period occupies *the space between the First and Last Quarters of the Moon;* and the fair weather the remainder of the time.

WATER SPOUT.

July 22 —The inhabitants of Cromer were gratified by the appearance of a water spout, which continued in sight for some minutes, when the mass or column of water collected between a cloud and the surface of the sea broke in the offing, without doing any injury to the shipping.

STORMS IN DORSETSHIRE.

On Wednesday the 29th of July, a man was struck by lightning at Aston Pits, near Newport, in this county, and very dreadfully burnt. The same day there were very heavy storms of thunder and lightning in that neighbourhood.—During the present week much injury has been done to the growing crops in various parts of this county, and the vicinity of Pool, by violent torrents of rain.—(PAPERS.)

TABLE LXXII.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7th mo. July 30	NW	29·96	29·80	61°	46°	67°	49°	—	
31	SW	29·96	29·80	64	51	71	53	20	8
8th mo. Aug. 1	Var.	29·86	29·80	61	53	64	55	—	2
2	NE	29·86	29·80	64	54	69	55	—	10
3	Var.	29·85	28·80	63	52	69	52	—	2
4	NE	29·90	29·85	65	50	70	52	—	32
5	SW	29·95	29·90	57	50	58	51	29	23
6	Var.	30·00	29·95	63	47	63	49	—	41
7	NW	30·00	29·95	61	49	64	49	—	
8	NW	29·96	29·94	57	51	58	52	17	3
9	NW	29·97	29·96	57	45	58	47	—	
10	NW	29·97	29·96	58	53	60	54	—	2
11	Var.	30·07	29·96	63	49	64	50	—	5
12	NE	30·14	30·07	57	44	59	46	18	
13	N	30·15	30·14	64	43	68	44	—	
14	NE	30·15	30·12	67	49	69	50	—	
15	E	30·12	30·07	65	50	72	52	—	
16	E	30·06	30·05	68	54	75	57	34	
17	SE	30·05	29·98	73	55	77	54	—	
18	SE	29·98	29·76	78	58	85	61	—	
19	SW	29·96	29·76	72	55	77	56	56	1
20	W	30·00	29·98	71	55	76	57	—	
21	SW	29·97	29·94	69	57	78	54	—	
22	W	30·05	29·97	68	53	70	56	—	
23	SW	30·04	29·86	70	60	74	62	66	
24	SW	30·10	29·86	66	47	70	49	—	5
25	SW	30·10	30·04	69	52	71	53	—	
26	NW	30·04	29·96	67	53	70	53	35	
27	NW	29·99	29·96	69	51			—	
28	NW	29·99	29·98	59	48			17	—
		30·15	29·76	78	43			2·92	1·34

NOTES.—Eighth Mo. 4. Wet afternoon. 5. Wet morning. 6. "The day was gloomy: about 4 p. m. a very heavy shower commenced, which continued for about twenty minutes, then abated for a short time, but increased again, and continued all the evening, with thunder and lightning: the barometer was nearly stationary." Such were the phenomena at the Laboratory, were there fell 1·39 inch of rain. At Plaistow, two miles distant, there appears to have fallen only 0·41 inch of rain, and I find only this note, "Thunder in the afternoon." 13. Foggy morning: a *Stratus* at night. 14. The same.

. The same: lunar halo. 18. Some lightning during the night. . Thunder between 1 and 2 p.m. 24. Bright moonlight. 28. The nd this night very high.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·15 in.
	Least	29·76 in.
	Mean of the period	29·968 in.
Thermometer:	Greatest height	78°
	Least	43°
	Mean of the period	57·83° [Lab^y· 60·50°]
Evaporation		2·92 in.
Rain		1·34 in.

METEORIC STONES IN INDIA.

he India Papers contain an account of the descent of two huge masses of e in the neighbourhood of Lahore, accompanied by a series of explosions mbling the discharge of cannon;—a phenomenon, which had excited the ost consternation throughout the country.—A meteoric stone also fell on 6th of August, (1812?) near the British lines at Punderpoor. It weighed pounds, was very heavy for its size, being impregnated with iron, and ed with a thin black crust, as if gunpowder had exploded round it. The nd where it fell was an open space, near the village of Kokurrgam, and he rapidity of its descent, it was buried a foot deep in the earth. It was ed up by a native of rank, and was, with the greatest difficulty, obtained aptain M.; as the possessor, *conceiving that it was of heavenly fabrication, had mined to repeat his prayers to it thrice a day.*—(PUB. LEDGER, *Oct.* 1813.)

ompare this with the worship paid by the Ephesians to the *petes,* (that which fell from Jupiter,) as mentioned Acts xix. 35: re note, that the word *image* is supplied in the translation, ing it probable from the original, that it was in fact *a Meteoric ie.*—L. H. [On which my friend Silvanus Bevan, in a note ch I received from him about the time of publication, writes : "Respecting thy ingenious conjecture in the Notes to Tab. 72, sorry to remark that *Pliny* says it was a small image of ebony le by *Canitia.* He also alludes to the common opinion of its enly origin."—I reply, that though unable, after a diligent ch, to find that passage in Pliny's Nat. Hist. I retain my first ion: thinking it probable the priests had made, out of the me-olite, an image of rude workmanship, which Pliny from its ur took to be formed of *ebony,* and further described it as *tie tactus,* hoary with age; now, by the error of some scribe or ter, made into *Canitiâ factus.*]

TABLE LXXIII.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 8th mo. Aug. 29	NW	29·99	29·98	54°	52°	55°	51°	—	16
30	NE	30·04	29·99	61	53	63	53	—	14
31	N	30·15	30·04	60	48	62	48	26	
9th mo. Sept. 1	NE	30·18	30·15	59	48	61	48	—	
2	SE	30·15	30 10	62	54	65	56	—	
3	SW	30·10	29·95	62	53	65	55	—	
4	SE	29·95	29·89	63	45	67	46	—	
5	NE	29·96	29·89	65	46	68	47	28	
6	NE	30·07	29·96	67	40	69	43	—	
7	SE	30·09	30·07	67	41	70	40	—	
8	E	30·07	29·97	69	50	74	46	—	
9	SE	29·99	29·97	68	47	73	50	41	
10	S	30·17	29·95	67	47	68	49	—	
11	NW	30·28	30·17	68	42	68	43	—	
12	W	30·26	30·22	69	44	68	45	—	
13	Var.	30·18	30·14	71	42	73	43	—	
14	Var.	30·18	30·07	69	40	69	39	53	
15	NW	30·07	29·94	68	41	70	42	—	
16	SW	29·94	29·82	72	47	73	47	—	
17	Var.	29·96	29·82	62	41	63	43	—	15
18	NW	30·20	29·96	60	37	59	39	—	
19	SW	30·14	30·12	60	46	61	48	48	
20	SW	30·12	30·03	69	45	69	44	—	
21	W	30·03	29·97	73	47	73	50	—	
22	SW	29·95	29·91	68	50	68	51	—	34
23	SW	29·95	29·93	57	44	59	44	57	
24	NW	30·06	29·95	56	34	57	34	—	
25	Var.	30·04	29·99	60	40	61	41	—	
26	W	30·07	30·04	63	53			23	
		30·28	29·82	73	34			2·76	0·79

Notes.—Eighth Mo. 30. Very showery. Between 4 and 5 p. m. a *tornado* (as it seems by the description given) crossed the village of Plaistow, in a direction from NE to SW, which left behind it considerable traces of its violence: a large quantity of wheat in sheaves was carried over a hedge into a neighbouring field: a fence was levelled, and about seventy *oak hurdles* torn out of the ground, some of which were seen tumbling over in the air, and fell at two hundred yards distance.

Ninth Mo. 12. Misty morning: much dew. 13, 14. The same in the evening, a dense *Stratus* reflecting on its surface with much brilliancy the orange colour of the western sky. 15. Hoar frost in the pastures: a *Stratus* at night as before, the wind coming about to the eastward soon after it was formed. 16. *Cirrus*, with *Cirrostratus* and *Cumulus*. 17. Rain most of the afternoon: a rich crimson tinge on the lower surface of the clouds at sunset. 18. At sunset the sky was extensively coloured with orange, surmounted by a distinct blush of red: the colour was reflected in the E horizon. 19. Much hoar frost. 22. Clear morning at first, but soon overcast, with rain. 25. Hoar frost. 26. *Cirrostratus*.

RESULTS.

Easterly Winds prevailed in the fore part, and Westerly in the latter part of this period.

Barometer:	Greatest height	30·28 in.
	Least	29·82 in.
	Mean of the period	30·040 in.
Thermometer:	Greatest height	73°
	Least	34°
	Mean of the period	54·93° [Lab^{y}· 55·90°]
Evaporation		2·76 in.
Rain		0·79 in.

FALL OF A PRECIPICE.

An avalanche occurred on the 4th of September, in the neighbourhood of Villeneuve, Switzerland. A part of the eastern chain of the Fourches, which had been sapped by a stream that ran at the base, suddenly fell with a terrific noise. About thirty cottages were buried beneath the ruins, and twelve of their inmates killed. The noise of the avalanche was heard at the distance of six miles.

EARTHQUAKE.

Shocks of an earthquake were felt throughout Italy on the 11th and 12th of September. At Florence, several houses, public edifices, and two churches were thrown down. The inhabitants, under the influence of extreme terror, fled into the country, and the greater part of the population abandoned their homes, and passed two days and nights in the fields.—(PAPERS.)

TABLE LXXIV.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9th mo. Sep. 27	SW	30·04	29·77	68°	59°	67°	60°	—	4
28	SE	29·90	29·67	63	53	65	54	—	—
29	NE	29·90	29·90	57	55	60	55	—	—
30	E	29·90	29·75	59	55	61	56	20	—
10th mo. Oct. 1	W	29·92	29·75	62	48	63	45	—	28
2	W	29·98	29·92	64	48	64	49	—	1
3	SE	29·98	29·90	61	41	65	39	2	9
4	SW	29·90	29·78	67	44	67	44	—	
5	NW	29·78	29·31	69	55	67	50	—	23
6	SE	29·32	29·12	64	41	67	42	—	22
7	Var.	29·32	29·12	57	45	60	45	—	5
8	SE	29·40	29·32	62	40	65	40	—	6
9	NW	29·40	29·35	53	46	55	46	13	7
10	S	29·35	29·28	55	43	58	42	—	32
11	W	29·28	29·23	53	38	55	40	—	6
12	Var.	29·23	29·16	51	37	52	38	—	8
13	SE	29·16	28·83	57	45	59	44	—	60
14	SW	29·14	28·83	51	42	53	43	3	10
15	W	29·39	29·14	53	43	53	44	—	—
16	W	29·56	29·39	56	34	56	36	—	—
17	SW	29·56	29·05	55	39	58	41	—	29
18	W	29·17	28·74	61	50	60	51	—	44
19	SW	28·81	28·53	59	49	60	49	9	37
20	NW	29·54	28·81	57	42	57	43	—	—
21	NW	29·74	29·50	53	37	53	41	—	
22	SW	29·45	29·35	59	46	59	46	—	2
23	W	29·92	29·45	54	41	55	43	10	
24	SW	29·92	29·74	56	41			—	—
25	SE	29·50	29·40	56	41			—	31
26	SW	29·74	29·72	53	38	52	40	6	—
		30·04	28·53	69	34			0·63	3·64

NOTES.—Ninth Mo. 26. Windy. Some rain in the night. 27. Very foul sky a. m. 28—30. Rain at intervals in very small quantity.

Tenth Mo. 1. A thunder storm about 1 p. m., which was chiefly in the W with heavy showers. 4, 5. Much dew. A storm of wind about midnight on the 5th. 6. Windy. 7. Misty morning: the trees dripping. 8. Rainbow, several times repeated between 8 and 9 a. m. Showers followed. 10. Rainbow, p. m. 11, 12. Rain in the night, misty morning. 3. *Cirrostratus* and *Nimbus* a. m., sunshine, and showers: a wet night. 16. Sunshine, with *Cumulostratus*. 17. Misty morning. 18. Squally during the night, with heavy showers.

19. Thunder and lightning about 2 p. m. Very heavy squalls with rain. 20. Sunshine a. m. much wind. 21. Clear and calm this evening. 22. Overcast, windy, a. m. In the evening a wet squall, with some lightning. 24. No swallows have been seen since the 19th or 20th. 25. A few swallows appeared again to-day.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height	30·04 in.
	Least	28·53 in.
	Mean of the period	29·468 in.
Thermometer:	Greatest height	69°
	Least	34°
	Mean of the period	51·46° [Lab^{y}· 52·10°]
Evaporation		0·63 in.
Rain		3·64 in.

The evaporation was much greater during the above period than the amount here stated, as appears by observations at the Laboratory. It was probably not less than two inches. The situation of the gauge had been changed.

Hurricane and Earthquake at Jamaica.

Kingston, Jamaica, October 17.—During the greater part of Monday, there was a considerable fall of rain, with a heavy swell from the southward, and strong indications of an approaching storm. Between the hours of six and seven of that evening the wind began to blow with great violence, and about midnight had increased to a perfect hurricane, the sea being at the same time dreadfully agitated, passing over the different wharfs, and sweeping every thing in its overwhelming course. The weather continued in this boisterous state until eight o'clock next morning, when the fury of the wind considerably abated, and copious torrents of rain fell during the remainder of that day.

October 24.—We are concerned to state, that the accounts received this week from various parts of the country, furnish melancholy details of the damage sustained in consequence of the late tempestuous weather.—At Salt-hill, (parish of Port Royal,) a piece of about sixteen acres of land, with a small house on it, sunk down *and was afterwards swept* [rather *slid*] *to the distance of three or four hundred yards from its original situation*, without occasioning any injury to the house.

November 14.—On Wednesday morning, at twenty minutes past two o'clock, a smart shock of an earthquake was felt in this city and neighbourhood; and at ten minutes before six, three most alarming and tremendous concussions immediately succeeded each other, accompanied by a most dreadful rumbling noise and crash, and continuing for upwards of thirty seconds. The shock was felt throughout the whole island, and many houses and plantations suffered severely. The watchman at the dock yard, *a few minutes previous to the shock, observed a large meteor*, which passed in a direction from the SE to the NW. The shock is stated to have lasted one minute and some seconds.—(Papers.)

TABLE LXXV.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 10th mo. Oct. 27	SW	29·40	29·24	52°	40°			—	26
28	SW	29·75	29·40	51	32			—	
29	W	29·80	29·74	49	33	50°	33°	15	
30	SE	29·78	29·66	51	39	52	41	—	14
31	W	29·94	29·78	54	41	54	42	—	
11th mo. Nov. 1	SW	29·94	29·87	55	50	56	42	—	—
2	N	30·04	29·87	54	44	54	45	7	65
3	SW	—	—	49	38	50	39	—	
4	W	30·05	29·83	48	39	50	38	8	
5	NW	29·83	29·80	49	30	48	33	—	
6	SW	29·83	29·80	45	27	46	30	—	
7	W	29·83	29·79	45	24	43	25	—	
8	E	29·79	29·77	40	27	39	27	5	
9	E	—	—	44	26	44	27	—	
10	NE	30·15	30·03	45	33	44	29	—	
11	SE	—	—	46	39	47	38	—	32
12	E	30·03	29·58	45	39	45	40	—	38
13	NE	29·58	29·20	51	44	52	45	—	55
14	W	29·59	29·20	52	40	52	43	—	—
15	SW	29·59	29·30	52	39	48	41	—	3
16	NE	29·30	29·00	46	42			—	—
17	NE	29·00	28·96	46	40			—	—
18	NW	29·66	28·96	42	32	43	32	7	13
19	N	29·86	29·66	42	28	41	28	—	
20	N	29·97	29·83	41	33	40	28	—	—
21	NE	30·32	29·97	39	26	38	28	7	
22	N	30·38	30·31	43	25	40	27	—	
23	SW	30·31	30·08	44	26	41	28	—	
24	SW	30·08	29·89	48	39			9	
		30·38	28·96	55	24			0·58	2·46

NOTES.—Tenth Mo. 27. Misty and overcast, a. m.: wet at noon: p. m. the barometer descended at the rate of a tenth of an inch per hour, the wind increasing in proportion, with much rain, the clouds sweeping the earth. The evening was very tempestuous; before midnight the barometer had risen again, and the weather was moderate. Many large trees were blown down. 28. Hoar frost: rather misty. At sunset, the sky exhibited a fine collection of coloured clouds, in the modifications *Nimbus* and *Cirrus,* with broad parallel bands of red in the haze above them. 28. Fair and calm. 30. *Cirrostratus* and *Cumulus:* the sky again beautifully coloured.

Eleventh Mo. 1. Cloudy. 2. Wet a.m. 5. Fine day. 6—11. Chiefly misty or cloudy, with hoar frost, and some very thick local fogs. 11. Overcast a. m. The *Cirrostratus* prevails, and sounds travel with the wind to an unusual distance: *we hear the rattling of the carriages on the pavement in London, through a direct mean distance of five miles.* This phenomenon is perhaps to be attributed to a thick continuous sheet of haze in the air above us, which acts as a sounding-board. 12. Rain through the day. 13. Misty: rain: sounds are again distinctly heard from the city. 15. Fair: a *Stratus* at night, 16. Overcast; with an easterly gale. 18. Wet stormy day, night clear and calm. 20. Misty, much rime on the trees, which came off about noon in showers of ice. At 11 a. m. a perfect but colourless *bow* in the *mist:* near 4 p. m. there was a shower, in which the rainbow showed its proper colours. 22. Clear: the ground just sprinkled with hail balls. 23. Misty a. m. with rime; clearer p. m: thaw in the night. 24. Clear morning.

RESULTS.

Winds for the greater part Westerly; though the rain chiefly fell during an Easterly Wind.

Barometer:	Greatest height	30·38 in.
	Least	28·96 in.
	Mean of the period	29·678 in.
Thermometer:	Greatest height	55°
	Least	24°
	Mean of the period	41·31° [Lab^y. 41·60°]
Evaporation		0·58 in.
Rain		2·46 in.

A River Changing its Course.

From the year 1750, the *North Esk*, in Kincardineshire, emptied itself into the sea upon the lands of Kirkside and Woodstone. About a twelvemonth ago, however, in consequence of an overflow in the river, and a very high tide, it excavated a new channel on the lands of Comieson, upon which, on an average, one half of its contents continued to run during last fishing season. A new revolution has now taken place in the course of the river, which on Monday last completely opened out its old channel upon the lands of Kirkside and Woodstone, by which a valuable property is restored to its former owners. This river had, several times previous to the first-mentioned date, undergone a similar change from the same causes; and upon one of these occasions it gave rise to a long and expensive litigation between the new and old proprietors, which was, at last, decided in favour of the gentleman on whose grounds the river had begun to flow; all artificial means employed to obstruct or change the course of a river being declared illegal.—(Pub. Ledger, *Nov.* 2.)

TABLE LXXVI.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 11th mo. Nov. 25	SW	29·89	29·80	48°	35°				
26	E	30·07	29·77	47	43	49°	37°		26
27	N	30·21	30·10	49	42	49	41		
28	NE	30·10	29·92	47	38	45	50		
29	SE	29·89	29·85	49	41				
30	S	29·95	29·88	50	47	52	47		15
12th mo. Dec. 1	S	29·96	29·72	52	44	54	44		5
2	NW	30·08	29·96	49	42	47	45		—
3	E	30·11	30·09	49	45				—
4	E	30·08	30·05	48	38	48	40		11
5	E	30·22	30·08	44	33	45	34		
6	NE	30·51	30·29	42	26	41	27		
7	NE	30·51	30·41	35	23	35	22		
8	NE	30·41	29·94	34	18	30	19		
9	W	29·96	29·94	35	24				
10	NW	29·89	29·78	34	29	35	29		—
11	E	30·00	29·97	36	27	35	27		
12	NE	29·97	29·79	32	24	30	24		
13	NE	29·79	29·71	34	24	31	20		
14	NE	29·71	29·66	35	28	35	27		
15	E	29·66	29·20	34	28	33	27		
16	E	30·20	28·98	34	28	34	26		—
17	E	30·23	28·98	35	32	35	31		27
18	E	29·51	29·22	38	33	38	31		18
19	E	29·57	29·47	38	35	39	35		
20	E	29·76	29·57	36	31	38	39		
21	NW	29·82	29·76	38	32	37	30		—
22	Var.	30·02	29·82	42	33	40	31		—
23	N	30·30	30·02	36	31	37	28		—
24	N	30·46	30·30	35	32	36	30		3
		30·51	28·98	52	18				0·95

NOTES.—Eleventh Mo. 28. The sky, about sunset, was overspread with *Cirrus* and *Cirrostratus* clouds, beautifully tinged with flame colour, red and violet. 30. The sky again much coloured in the morning.

Twelfth Mo. 5. The weather, which has been hitherto mostly cloudy, with redness at sunrise and sunset, begins now to be more serene. 6. Hoar frost. 7. A little appearance of hail balls on the ground. 8, 9. Clear, hoar frost. 11. Snow this morning, and again after sunset. 13. An orange-coloured band on the horizon this evening; this phenomenon is simply the appearance of the descending dew. 15. A gale from NE, unaccompanied by snow, came in early this morning. 16. a. m. The wind has subsided to a breeze, and there now falls (at the temperature of 27·5°) snow, very regularly crystallized in stars. 17. a. m. It snowed more freely in the night, and there is now a cold thaw, with light misty showers. 18. A little sleet, followed by snow. *Ice has been formed in the night, by virtue of the low temperature which the ground still possesses.* A wet evening. 21. A little rain, a. m. 22. A dripping mist. 24. Cloudy; a little rain; some hail balls in the night.

RESULTS.

Prevailing Winds Easterly.

Barometer:	Greatest height	30·51 in.
	Least	28·98 in.
	Mean of the period	29·882 in.
Thermometer:	Greatest height	52°
	Least	18°
	Mean of the period	36·68° [Lab$^{y.}$ 35·93°]
Rain and snow		0·95 in.

The evaporation during this period was not ascertained; but it probably did not exceed half an inch. The observations on the temperature of the Laboratory, for the last seven periods, require some notice. In the *summer months* (the Thermometer not having been so well shaded) they exceed mine by an unusual quantity. This excess will be found on comparison to go off gradually, until, on the approach of *winter*, the moon first becomes only equal to mine, and then falls below it. I have thought it best to insert these observations, though differing in some instances so widely, as a specimen of the effect of two much exposure to the sun on the instrument.

COPENHAGEN, *December* 19.—The intense cold still continues, *in consequence of the East wind.* Reaumur's thermometer is thirteen below Zero. From our custom-house to the coast of Sweden, the Sound presents only one continued surface of ice. Should the frost continue a short time longer, it will soon be passable on foot. Some ships from our provinces, which are detained by the ice, have already sent home their crews.

FIGURE OF A DROWNED MAN IN THE ICE.

The curiosity of several persons in the neighbourhood of Halnaker, near Chichester, was last week excited by the figure of a man, apparently in a round frock, on the ice of a pond in the park; but no individual being missed in the parish, it was conceived to be an accidental impression on the ice, and was, by many, treated as a fancy. It being, however, last Tuesday ascertained that a man of the neighbouring parish of Charlton was missing, the pond was searched, and he was found lying at its bottom, in ten feet water, exactly under the figure. The ice was uniformly seven inches thick; but that which composed the figure was darker and more transparent.—(PUB. LEDGER, *Dec.* 21.)

Meteorological Observations,

MADE AT

TOTTENHAM, NEAR LONDON,

IN THE YEARS

1813, 1814, 1815, 1816.

(First published Monthly in Thomson's Annals of Philosophy.)

TABLE LXXVII.

1812.	Wind.	Pressure.		Temp.		T. No. 2.		Evap.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 12th mo. Dec. 25	N	30·46	30·40	35°	31°	34°	28°	—	—
26	N	30·50	30·40	37	30	37	29	—	—
27	N	30·52	30·48	36	29	35	29	—	1
28	W	30·52	30·32	43	32	43	31	—	
29	W	30·32	30·15	46	42	47	39	—	
30	W	30·15	29·92	50	42	48	41	—	
31	W	29·81	29·75	44	40	45	41	—	—
1813. 1st mo. Jan. 1	W	30·09	29·81	45	38	46	39	—	—
2	SW	30·26	30·09	44	36	52	37	6	—
3	W	30·30	30·26	41	34	40	34	—	—
4	SE	30·30	30·09	42	34	42	36	—	—
5	SW	30·09	29·86	44	37	46	37	—	5
6	SW	29·77	29·70	50	40	52	39	—	9
7	NW	29·70	29·30	46	40	47	41	—	
8	NW	29·62	29·30	48	28	47	31	—	
9	NW	29·87	29·75	41	31	40	28	9	9
10	NW	29·82	29·70	34	28	34	28	—	11
11	SE	29·80	29·70	40	26	38	30	—	—
12	SE	29·70	29·61	34	29	36	30	—	
13	SE	29·58	29·53	38	34	39	34	5	16
14	NE	29·74	29·53	38	33	39	32	—	
15	NW	30·00	29·74	38	28	38	27	—	
16	E	30·20	30·00	44	29	43	29	—	
17	SE	30·20	30·04	35	28	36	28	—	
18	SE	30·14	30·04	31	30	33	29	—	
19	E	30·26	30·14	33	31	33	30	—	—
20	NE	30·27	30·26	34	30	35	29	—	
21	NE	30·35	30·27	34	29	34	29	—	
22	NW	30·50	30·35	36	23	35	21	15	
23		30·38	30·22	35	30	33	24	—	8
		30·52	29·30	50	23			0·35	0·59

NOTES.—Twelfth Mo. 25, A very slight fall of snow. 27. A little snow last night. 30, 31. Windy night: small rain at intervals.

1813. First Mo. 1. Small rain at intervals. 3. Misty morning. 5. Windy. 6. Windy: small rain. 7. Very misty a.m., dark and cloudy p.m. About eight some lightning, which was soon followed by a shower. 9. Hoar frost: at 9 a.m. thick air, with *Cirrostratus* and *Cirrocumulus: sounds came freely from the city,* with the wind at SSW. Sleet and rain followed within an hour. 13. Overcast, a.m., thin sleet and rain. 14. Cloudy. 19. A little snow a.m. 22. Clear

a. A fine red blush on the horizon at sunset. 23. Hoar frost: ı after noon a fine granular snow: after sunset a more plentiful ular snow, adhering to the trees and shrubs.

RESULTS.

Winds Variable.

rometer:	Greatest height	30·52 in.
	Least	29·30 in.
	Mean of the period	30·022 in.
rmometer:	Greatest height	50°
	Least	23°
	Mean of the period	36·25° [Lab^y. 36·11°]
Evaporation		0·35 in.
Rain and snow		0·59 in.

STORM AT GIBRALTAR.

ı the 29th December, a most violent storm came on at Gibraltar from the in which many vessels and lives were lost.—The late gales at Gibraltar more severe than any remembered to have been experienced. Twenty-; vessels were lost in Catalonia Bay, and twenty in Gibraltar Bay. Many ıe largest trees upon the rock were torn up by the roots, others entirely ped of their limbs, *and some measuring upwards of eighteen inches in diameter, n short off in the trunk.*—(PUB. LEDGER.)

TABLE LXXVIII.

1813.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1st mo. Jan.	24	NE	30·46	30·37	37°	24°			—	
	25	NE	30·47	30·45	36	22			—	
	26	NE	30·48	30·46	41	35			—	
	27	N	30·49	30·47	39	21			—	
	28	Var.	30·39	30·37	32	20			—	
	29	Var.	30·48	30·39	34	21			—	
	30	NW	30·48	30·44	42	30			—	
	31	NW	30·50	30·44	48	34			15	27
2d mo. Feb.	1	Var.	30·33	30·24	41	30			—	
	2	NW	30·37	30·32	37	32			—	
	3	NW	30·45	30·37	43	34			—	
	4	W	30·45	30·29	41	34			—	
	5	S	30·29	29·78	47	36			—	—
	6	SW	29·89	29·78	47	38			—	
	7	SW	29·98	29·79	48	37			—	—
	8	SW	29·66	29·63	52	44			—	—
	9	SW	29·88	29·66	51	35			—	36
	10	W	30·00	29·58	46	33			—	
	11	S	30·00	29·75	47	35			—	
	12	S	29·75	29·28	56	44			—	—
	13	SW	29·48	29·37	57	39			—	33
	14	SW	29·38	29·27	52	42			71	30
	15	SW	29·34	29·27	52	41			—	18
	16	SW	29·44	29·34	48	41			—	—
	17	SW	29·37	29·30	52	43			—	27
	18	SW	29·88	29·37	52	41			—	—
	19	S	29·66	29·60	56	40			—	19
	20	SW	29·80	29·66	53	42			—	—
	21	SW	29·70	29·69	57	49			70	
			30·50	29·27	57	20			1·51	1·90

[illegible] First Mo. 24. Light clouds and sunshine. 28. Rime [illegible]: very misty a. m., clear p. m. 29. Hoar frost: the sky [illegible] 30. Misty to the S a. m. A grey day. 31. Misty a. m. [illegible] clouds: rain at night.

[illegible] 1. The *Cumulostratus*, which had not for a long time [illegible] appeared to-day in large masses. 7. Showers and [illegible] several large clouds of the modification *Nimbus.* [illegible] thunder gust from the W about 2 p. m., [illegible] ge was done to the roofs and chimnies of [illegible] d by a series of heavy gales continuing [illegible] (with a few short intervals of calm and pleasant weather) to the end of the period. The lunar halo appeared before several of these, of a large diameter; and, on the 18th, about 11 a. m., there was a brilliant rainbow. The River Lea has considerably inundated the adjacent lands.

RESULTS.

Winds in the fore part Northerly, with a very dry dense air, and low temperature: in the latter part Southerly, with a rare and moist atmosphere, and high temperature.

Barometer:	Greatest height	30·50 in.
	Least	29·27 in.
	Mean of the period	29·957 in.
Thermometer:	Greatest height	57°
	Least	20°
	Mean of the period	40·82°
Evaporation (at Stratford)		1·56 in.
Rain		1·90 in.

The Temperature in the Second Mo. is that observed at Stratford.

Deal, *February* 16.—It last night blew excessively hard from the SSW, accompanied with a heavy sea.

February 18.—The wind the whole of last night and this day has blown tremendously from the west.

Portsmouth, *February* 18.—The whole of last night and to-day it has blown very hard at SW, attended with very heavy squalls.—(Pub. Ledger.)

TABLE LXXIX.

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2nd mo. Feb. 22	SW	29·80	29·69	57°	41°			—	
23	NW	30·03	29·80	45	35			—	
24	W	30·14	30·03	49	32			—	
25	SW	30·13	29·83	50	35			—	71
26	SW	29·90	29·70	52	35			50	8
27	NW	30·33	29·90	46	32			—	
28	NW	30·36	30·30	50	34			23	
3rd mo. March 1	SW	30·30	30·20	51	39			—	
2	SW	30·20	30·02	47	35			—	—
3	Var.	30·33	30·02	52	32			—	—
4	SW	30·33	30·20	51	36			—	6
5	W	30·34	30·20	50	35			—	
6	W	30·40	30·34	53	35			—	
7	NW	30·40	30·30	49	39			—	
8	NW	30·30	30·20	54	43			—	
9	NW	30·20	29·89	52	36			56	—
10	E	29·96	29·89	42	26			—	12
11	NE	30·21	29·96	39	24			—	—
12	NE	30·27	30·21	37	24			—	
13	NW	30·27	30·20	40	29			—	
14	SW	30·20	30·10	47	40			19	
15	SW	30·18	30·10	53	43			—	
16	Var.	30·18	30·09	51	32			—	
17	NE	30·09	29·96	56	32			—	
18	NW	29·96	29·96	58	36			—	
19	E	29·96	29·78	58	40			—	
20	SW	29·96	29·78	56	35			—	14
21	SW	29·96	29·84	53	42			31	
22	SW	30·25	29·96	55	33			—	
23	NW	30·30	30·28	50	34			—	
24	W	30·28	29·98	47	39			18	35
		30·40	29·69	58	24			1·97	1·46

NOTES.—Second Mo. 24. Hoar frost. About 6 p. m. a very dark cloud came over, lowering with an arched base, as before thunder, and presently discharged a shower of large hail and rain, which was accompanied by a cold wind. 25. Fair a. m., wet and windy p. m., and night. 26. The same. 27. *Cirrus*, *Cumulus*, and *Cirrostratus* clouds appeared together: much wind about 7 p. m. wind NW, a bright meteor passed from the zenith towards the N, declining a little westward. 28. Clear morning: wind moderate.

Third Mo. 1. Hoar frost, fair. 2, 3. Light showers. A *Nimbus* appeared S of the setting sun on the 3rd, which went away southward. 9. Light showers. 10. Sleet a. m. At sunset a *Cumulostratus,* with a snowy appearance: some hail balls in the night. 11. A *Nimbus* was perceptible by 7 a. m., forming in the NE. There were some heavy (though transient) squalls of snow during the day. Abundance of snow fell on this and the following night to the southward, extending as far as the coast of France.

RESULTS.

Prevailing Winds Westerly, with a marked interruption by a current from the NE, occasioning snow about the middle of the period.

Barometer:	Greatest height	30·40 in.
	Least	29·69 in.
	Mean of the period	30·109 in.
Thermometer:	Greatest height	58°
	Least	24°
	Mean of the period [Lab$^{y.}$]	42·50°
Evaporation		1·97 in.
Rain		1·46 in.

EARTHQUAKE ON THE COAST OF DEVON.

March 21.—About six o'clock, the inhabitants of Exmouth were alarmed by the shock of an earthquake, which lasted for two or three seconds. The houses were shook, the people hurried from their beds, and the utmost alarm prevailed for some time throughout the town. The shock was felt in like manner at Sidmouth, Budleigh, Salterton, Starcross, and for many miles along the coast, but we have not heard of its having been attended by any ill consequences.—(PAPERS.)

TABLE LXXX.

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3rd mo. Mar. 25	NW	30·37	30·28	47°	35°			—	
26	NW	30·50	30·37	51	27			—	
27	SW	30·47	30·43	55	32			—	
28	NW	30·43	30·30	67	49			—	
29	SW	30·30	30·10	66	53	63°	46°	—	
30	Var.	30·10	29·89	58	47	61	46	—	1
31	SE	29·89	29·18	57	42	57	41	40	
4th mo. April 1	SW	29·25	29·18	50	35	53	42	—	27
2	W	29·45	29·25	52	35	48	33	—	9
3	SW	29·74	29·45	48	27	49	31	—	3
4	SW	29·85	29·74	54	29	47	30	—	
5	SW	29·85	29·81	51	40	51	30	—	13
6	SW	29·90	29·74	58	45	58	45	—	
7	W	29·93	29·90	65	43	61	46	43	—
8	E	29·97	29·87	69	37	70	35	—	
9	SE	30·04	29·97	66	41	66	36	—	
10	E	30·10	30·04	65	41	65	40	26	
11	E	30·14	30·10	64	35	64	34	—	
12	E	30·23	30·14	69	42	69	42	—	
13	NE	30·34	30·23	66	35	66	34	—	
14	E	30·20	30·10	66	42	66	42	36	
15	NW	30·20	29·96	68	42	68	48	—	
16	NW	29·96	29·77	66	44	64	47	—	
17	NW	30·10	29·77	68	41	63	38	—	—
18	NW	30·13	30·10	56	42	56	42	53	
19	NW	30·10	30·10	64	44	64	44	—	
20	NW	30·10	30·05	64	40	64	40	—	
21	N	30·09	30·05	57	32	57	32	—	
22	NE	30·10	30·08	50	32	50	32	—	17
23	NE	30·14	30·10	45	34	49	33	40	
		30·50	29·18	69	27			2·38	0·70

NOTES.—Third Mo. 27. Hoar frost: large spreading *Cirri.* 28. Temperature 60° in the evening. 29. Overcast sky. 30. A veil of *Cirrostratus* a. m. The *Cumulus* afterwards showed itself, and a slight shower ensued.

Fourth Mo. 1. Stormy, with rain. 2. Hoar frost: a sprinkling of opaque hail about sunrise. Several showers of this and some rain during the day. 3. Hoar frost: *Cumulus* a. m. Showers of snow, and of opaque hail p. m. 5. *Cirrostratus,* a. m. wet and windy. 10. *Cirrus* and *Cumulus* clouds: the wind increases in strength: the mornings have been misty of late, and there have been plentiful dews, in consequence of the great difference between the temperatures of day and night. 15. Wind boisterous in the evening. 16. Cloudy a. m. 17. Slight showers. 20. From the 7th of this month we have had summer-like days and cold nights: the roads have become very dusty, and the earth considerably dry. 21. Some clouds of a threatening appearance from the NE in the evening, attended with depression of temperature. 22. p. m. Hasty showers, mixed with hail; after which steady small rain till evening. 23. Cloudy: several scanty hail-showers from large *Nimbus* clouds passing over. During the approach of one of these, a slender, tapering, and somewhat twisted column appeared in front, detached from the main body, and reaching down to the earth in the manner of a water-spout. In a few minutes, by spreading on all sides, it became incorporated with the rest of the shower. This is not a very uncommon appearance, but I have seldom seen it so perfectly exhibited.

RESULTS.

Prevailing Winds Westerly, interrupted (after the middle of the period) by an Easterly current.

Barometer:	Greatest height . .	30·50 in.
	Least	29·18 in.
	Mean of the period . .	30·005 in.
Thermometer:	Greatest height . .	69°
	Least	27°
	Mean of the period . .	49·11° [Lab^{y}· 48·36°]
Evaporation		2·38 in.
Rain		0·70 in.

LARGE METEOR.

On Friday evening the 23rd April, between nine and ten o'clock, a fiery meteor was seen at Brigg, (Lincolnshire,) in a northerly direction. When first discovered, it was at a considerable height, and gliding downwards in an oblique manner. It appeared about the size of a full moon, of the colour of burning brimstone, and constantly emitting small balls of very brilliant red light, which took an opposite direction, and soon disappeared; and by which the meteor appeared completely exhausted before it reached the ground.

(PUB. LEDGER.)

TABLE LXXXI.

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 4th mo. April 24	NE	30·14	29·95	48°	35°	48°	30°	—	
25	NE	29·95	29·71	53	43	53	39	—	51
26	SE	29·71	29·51	63	39	63	36	—	
27	NW	29·51	29·36	48	45	48	42	—	52
28	N	29·61	29·36	50	41	49	40	15	4
29	NE	29·65	29·61	49	39	47	37	—	21
30	E	29·65	29·63	51	39	51	39	—	—
5th mo. May 1	NE	29·72	29·63	59	45	52	44	—	25
2	Var.	29·79	29·72	61	46	61	44	—	
3	E	29·79	29·73	66	50	66	49	17	17
4	Var.	29·86	29·73	65	51	65	49	—	24
5	NW	29·91	29·87	64	49	64	47	—	—
6	NE	29·87	29·69	68	50	68	49	—	16
7	SE	29·70	29·69	69	45	69	46	—	8
8	SE	29·70	29·57	68	49	68	47	27	—
9	N	29·73	29·57	72	52	72	54	—	—
10	Var.	29·90	29·73	69	47	69	49	—	8
11	Var.	29·73	29·60	67	53	67	52	—	5
12	SW	29·64	29·60	74	49	74	53	—	3
13	SW	29·64	29·46	72	51	72	53	35	—
14	Var.	29·47	29·39	68	52	68	54	—	9
15	SW	29·70	29·57	65	47	65	49	—	—
16	SW	29·72	29·41	65	49	64	48	—	51
17	NW	29·82	29·68	60	47	60	46	—	—
18	Var.	29·80	29·78	60	49	60	48	45	25
19	SW	29·84	29·56	69	50			—	—
20	W	29·59	29·57	61	42			—	—
21	W	29·64	29·59	59	39			—	—
22	W	29·69	29·59	58	30			28	53
		30·14	29·36	74	30			1·67	3·72

NOTES.—Fourth Mo. 24. Heavy *Cumulostratus* clouds through the day. 25. Rain, near the whole day. 26. The *maximum* of temperature at 9 a. m., cloudy: clear at evening, with *Cirri*. 27. A wet day. 28. Wet morning: cloudy. 29, 30. Cloudy: much wind.

Fifth Mo. 1. The *maximum* of temperature at 9 a. m., wet. 2. Cloudy a. m. In the afternoon the sky cleared pretty suddenly, save that some dense *Cumulus* clouds remained in the NE, to the summit of one of which a *Cirrostratus* was observable for a considerable time adhering, which was at length incorporated with the larger cloud. The moon appeared with a pale golden crescent, the remainder of the disk being pretty conspicuous. 3. Dense *Cumulus* clouds to the S, with *Cirrus* and *Cirrocumulus* intermixed (as before thunder.) A shower of large props about sunset. 4. Overcast sky a. m. About 6 p. m. (after some previous dripping) a thunder storm, the weight of which fell to the E of us. A most brilliant rainbow, together with a complementary one, was exhibited for about forty minutes. The space included *within* the proper bow was very perceptibly *lighter*, and that *without* it, extending to the complementary arch, as much *darker* than the rest of the cloud. A nightingale sang with spirit in the midst of the shower. 6. a. m. Much dew: p. m. a large *Nimbus* in the N. *Cirrostratus* in the E, and *Cirrus* above, stretching from E to W. The large cloud moved away by W into the S. A thunder storm ensued in that direction, though nearly out of hearing, and lasted till midnight; after which we had a sudden heavy shower. 7. p. m. Cloudy: p. m. (after a shower) clearer, but with indications of more rain. 8. An appearance of much electrical action in the clouds far to the S and SW. 9. A few drops of rain a. m., various modifications of cloud appeared this day. 10. *Nimbi:* dripping afternoon: rainbow: fine evening. 13. Cloudy, windy. 14. Much wind. 15. The same: calm night. 16—18. Much wind: showers.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·14 in.
	Least	29·36 in.
	Mean of the period	29·678 in.
Thermometer:	Greatest height	74°
	Least	30°
	Mean of the period	53·90° [Lab$^{y.}$ 53·36]
Evaporation (the gauge being now placed on the ground)		1·67 in.
Rain		3·72 in.

A gauge placed against the north wall of the house, at about seven feet elevation, gave, for the evaporation in the same time, only 1·16 in.

THUNDER STORMS.

On the afternoon of Friday the 14th May, there was a dreadful storm of thunder and lightning, about thirty miles north of Aberdeen.

May 17.—The town of Macclesfield was visited by one of the most awful storms of hail, accompanied by loud thunder and lightning, remembered by any of its oldest inhabitants—the lower part of the town was inundated.—(PUB. LEDGER.)

TABLE LXXXI.

1813.	Wind.	Press. Max.	Press. Min.	Temp. Max.	Temp. Min.	T. No. 2. Max.	T. No. 2. Min.	Evap	Rain, &c.
L. Q. 4th mo. April 24	NE	29·59	29·55	59°	49°			—	
25	N	29·70	29·55	60	49			—	
26	[illegible]	29·76	29·65	61	49			—	
27	[illegible]	30·05	29·76	57	41			—	
[illegible]	[illegible]	30·10	30·05	60	42			—	
[illegible]	Var.	30·10	29·96	72	42			—	
[illegible]	NE	30·06	29·96	76	53			—	
5th mo. 30	S	29·97	29·90	73	56			65	34
31	NW	30·00	29·97	78	59			—	2
6th mo. June 1	E	29·97	29·83	85	50			—	
2	NE	29·95	29·83	84	54			—	
3	NW	30·17	29·95	72	51			—	
4	NW	30·17	29·88	65	51			75	
5	NW	29·88	29·82	58	48			—	
6	NE	29·73	29·67	56	47			—	
7	NE	29·80	29·73	71	43			—	
8	NE	29·73	29·51	75	48			—	
9	NW	29·53	29·43	75	54			48	—
10	NW	29·83	29·53	75	48			—	
11	S	29·83	29·74	76	52			—	
12	SE	29·98	29·74	77	45			—	
13	W	30·02	29·97	75	51			48	5
14	SW	30·07	29·78	67	52			—	—
15	SW	29·98	29·78	67	46			—	—
16	NW	30·04	29·98	63	44			—	—
17	Var.	30·09	30·04	61	48			—	—
18	N	30·15	30·09	61	39			—	—
19	N	30·16	30·15	57	37			—	—
20	NE	30·20	30·16	60	42			42	65
		30·20	29·43	85	37			2·78	1·06

Notes—Fifth Mo. 30. A shower p. m.: thunder to the westward. 31. Fine day: some thunder clouds appeared: the evening twilight was brilliant and tinged with orange—the new moon was conspicuous, and there fell much dew.

Sixth Mo. 1. *Cumulus, Cumulostratus,* and *Cirrostratus* clouds. The sunset was cloudy, with an orange tint. 2. *Cirrostratus* clouds, with haze to the S at sunset. At the same time there were *Cirri* in the N more elevated, and finely tinged with red. 4. Windy: cloudy till evening. 5. Clear a. m., afterwards cloudy and windy. 8. Windy: at sunset C with the *Cirrostratus* attached: much orange in the

shower early: cloudy, dripping. 10. p. m. Large
1. a. m. *Cumulostratus* clouds: p. m. *Cirri* in abun-
thickening. 12. *Cirri,* tinged red in the morn-
ht it was overcast, and rain fell. 13. a. m.
evening. 14—20. Occasional showers, some of
y.

RESULTS.

Prevailing Winds Northerly.

Barometer:	Greatest height	30·20 in.
	Least	29·43 in.
	Mean of the period	29·889 in.
Thermometer:	Greatest height	85°
	Least	37°
	Mean of the period	57·93°
Evaporation		2·78 in.
Rain		1·06 in.

Light of the Moon compared with the Evening Twilight.

Seventh Mo. 12, 1813.—A clear evening, with a gentle breeze from the West. The twilight being very brilliant and the Moon near the Full, I compared the intensity of their respective and opposite shadows, projected by a slender rod on white paper. At 9 p. m. the shadow of the twilight was very perceptible in the moonlight: but at 9 h. 20 min. the Moon cast an equally strong shadow into the twilight, which shadow appeared (as in the well-known experiment of the shadow of a candle in the daylight) of a bluish grey colour.

Thus it appears, that in certain conditions of the atmosphere favourable to refraction, the Sun affords us as much light an hour after he has set, as the Full Moon does an hour after she has risen.

TABLE LXXXIII.

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 6th mo. June 21	NE	30·16	30·14	66°	46°			—	
22	NE	30·18	30·14	67	41			—	
23	NE	30·10	30·08	70	55			—	
24	NE	30·15	30·08	64	46			—	—
25	E	30·18	30·15	74	50			55	4
26	NE	30·18	30·10	74	48			—	
27	E	30·10	29·97	77	45			—	
28	Var.	29·97	29·77	75	53			—	37
29	SW	29·77	29·64	74	52			—	80
30	W	29·64	29·54	65	52			40	75
7th mo. July 1	NW	29·75	29·64	70	53			—	16
2	N	29·86	29·75	67	50			—	20
3	NW	30·11	29·86	73	42			25	
4	NW	30·18	30·11	70	50			—	2
5	W	30·18	30·04	74	47			—	
6	SW	30·04	29·74	78	46			35	
7	S	29·65	29·57	78	57			—	
8	W	29·59	29·55	75	55			—	—
9	W	29·83	29·59	79	54			36	
10	NW	29·91	29·83	78	51			—	
11	NW	29·93	29·90	77	51			—	
12	W	29·90	29·76	76	54			—	
13	SW	29·76	29·63	76	58			38	
14	SW	29·63	29·60	71	58			—	
15	NW	29·70	29·60	67	50			—	60
16	NW	29·82	29·70	73	50			—	10
17	NW	29·87	29·82	74	47			—	—
18	W	29·87	29·73	77	50			43	
19	W	29·73	——	75	53			—	—
		30·18	29·54	79	41			2·72	3·04

Notes.—Sixth Mo. 21. Brisk wind through the day. 22. Wind more gentle: *Cumulostratus* and *Cirrostratus.* 24. A shower about 1 p. m. 25. The wind inclines to SE: clear twilight, somewhat orange coloured. 27. *Cirrus,* changing to *Cirrocumulus* and *Cirrostratus:* twilight somewhat opaque, but coloured. 28. Wind NE a. m.: the *Stratus* cloud appears to have prevailed in the night: slight showers at intervals during the day: at 7 p. m. several *Nimbi,* and some thunder to the SW, which with occasional lightning passed by S to NE: at 9 p. m. the air was so loaded with vapour as to deposit water on a glass vessel cooled only to 58·5°: it now began to rain heavily, ceasing at ten, with thunder and lightning still in the N. 29. *Cirrus, Cirrostratus,* and *Cumulostratus:* about 1 p. m. a heavy storm of rain and hail, with several electrical discharges. 30. In the forenoon heavy rain, ushered in by a peculiar hollow sound in the wind, then southerly: wet at intervals, p. m.: a part of this day's rain was taken by estimation, the gauge having been left under cover.

Seventh Mo. 3. After an appearance of two distinct orders of cloud during the forenoon, inosculation took place suddenly about one, and the *Cumulostratus,* with a brisk wind, prevailed till sunset. 4. A slight shower p. m.: from the 5th to the 9th several kinds of cloud prevailed, and occasioned at times considerable indications of rain, of which however a few drops only fell, the clouds still passing away to the N: in that quarter, on the evening of the 9th, we had several distant *Nimbi,* with the usual appearances of a strong electric charge: a single flash of lightning, and some rain just discernible in the horizon, were the only results. 13. After repeated exhibitions of the *Cumulostratus,* which continued to pass over to the N, we had this night a few drops of rain. 14. Dripping at intervals: the dust laid. 15. A wet day. The vulgar notion, that rain on this day (by the church calendar given to St. Swithin) is followed by the same *daily for forty days,* if tried *at any one station* in this part of the island, will be found fallacious. 16. Thunder p. m. during a shower. 17. A slight shower p. m., dew on the grass. 18. A fine day: the *Cumulostratus* prevailed, and the evening was very clear, with dew. 19. Showers.

RESULTS.

Prevailing Winds Easterly to the New Moon, afterwards Westerly.

Barometer:	Greatest height	30·18 in.
	Least	29·54 in.
	Mean of the period	29·875 in.
Thermometer:	Greatest height	79°
	Least	41°
	Mean of the period	61·91°
Evaporation		2·72 in.
Rain		3·04 in.

Shadows of Clouds projected in a Hazy Atmosphere.

Seventh Mo. 16, 1813.—After pretty much wet yesterday, we had this day *Cumulus* and *Cumulostratus,* passing to *Nimbus,* with a thunder shower about 4 p. m. The sun then passed behind a group of dense clouds in the NW, darting those broad diverging beams of light separated by shadows, first downward on the horizon and then up into the air, which Virgil so correctly defines in his first *Georgic:—*

> Aut ubi sub lucem densa inter nubila sese
> Diversi erumpent radii.—

It is obvious that these beams, should they be at any time extensive enough to pass the zenith of the observer, ought to converge again towards a point on the eastern horizon opposite to the sun's place in the western: which was in fact partially the case this evening.

Seventh Mo. 22. Travelling this evening between Winchester and Alton, with the setting sun behind me, I observed a considerable accumulation of dewy haze above the horizon before me, slightly reddened by the sun's rays; and in the midst of it several broad bars of shadow, *converging to a point on the horizon,* (conformably to the observation I made on the 16th inst.) and projected apparently by separate lofty dense clouds then remaining to the westward.

From long experience I am accustomed to connect the appearance of this elevated haze amidst clouds in warm weather with a thunder shower falling on the tract beneath it: and the reader will perceive, by the Notes forward, under Tab. 84, that this connexion *probably* existed in the present, as in the former instance.

Phenomena of the Evening Twilight.

Seventh Mo. 29, 1813.—This was a peculiarly fine evening for observing the phenomena of the twilight. The sun set, surrounded by a moderate glow of flame colour, and without a speck on the western sky. An extensive brightness was left along the horizon, which insensibly vanished upward, and towards the NE and SW. Opposite to this, and quite distinct in its boundaries, appeared in the SE the reflection from the *dewy haze* (dew now falling in abundance) which resting on the horizon by an extensive violet or purplish base, rose diminishing, till it terminated in a rose-coloured apex. As this went off, an orange tint in the NW spread and deepened, and was suddenly surmounted by a fine blush of red, making out the remainder of a grand pyramid of coloured light, reaching half way to the zenith, and glowing every moment with increasing brightness: so that at half an hour after sunset, the landscape to the eastward was actually in a much stronger light than immediately after the disappearance of that luminary. By the time that this was in perfection, the opposite pyramid was no longer visible: and, the twilight beginning to go off, the *red* first vanished, the orange rather spreading upward, at the same time that together with the white light, or ground of the picture, it grew every minute fainter: it was not however wholly extinct at half-past ten, or two hours from the commencement at sunset.

Singular Meteor.

The same night at ten, after several small meteors, (or shooting stars,) a more considerable white one passed the zenith from SE to NW, in a kind of spiral or twisted line, wasting away as it went, leaving a long train of whitish sparks; and unless my sense was deceived by a strong association of ideas, *hissing* like a rocket in its course. The impression it left on my mind was altogether that of a solid ignited projectile.

Summer Lightning.

It is a popular error, very commonly entertained, that on fine summer evenings there is sometimes a harmless kind of lightning, without the usual accompaniments of dense clouds and electrical explosions. The mistake has originated in the great distance at which lightning may be perceived in a dark night.

Seventh Mo. 31. I perceived much faint lightning in the SE, although it was bright starlight, and not a cloud visible at the time. On communication with my brother, who was then at Hastings, he informed me, that they had on the above-mentioned evening a heavy thunder storm in view for some hours, ranging as he conceived, *in a line between Dunkirk and Calais on the opposite coast.* It is probable therefore that the greater part of the discharges, the faint light of which was perceptible at Tottenham, were actually made at the distance of a hundred and twenty miles. I saw however one stroke with the usual linear zig-zag appearance, which I judged to proceed from the earth to the clouds, and which may have been *a returning stroke* far on this side of the storm.

THUNDER STORMS.

During a violent thunder storm at Rolleston, Staffordshire, *ten head of deer* belonging to Sir Oswald Moseley, were killed by the lightning.

The neighbourhood of *Diss*, Norfolk, was visited by a short but severe storm of thunder and lightning, about two o'clock on the 16th of July.—(PUB. LEDGER.)

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7th mo. July 20	E	29·51	29·49	75°	56°			—	
21	NW	29·55	29·51	68	57			—	
22	SW	29·55	29·50	75	58			—	
23	SW	29·50	29·42	75	53			—	1.00
24	W	29·53	29·40	74	55	74°	57°	48	77
25	SW	29·54	29·40	73	53	73	55	—	4
26	W	29·78	29·54	69	53	68	54	—	32
27	W	30·07	29·78	75	51	72	55	32	10
28	W	30·17	30·07	77	50	75	53	—	
29	E	30·07	29·95	78	54	81	57	—	
30	S	29·91	29·80	82	60	89	53	56	
31	NW	29·95	29·91	78	53	73	57	—	
8th mo. Aug. 1	SW	29·96	29·93	78	59	73	61	—	5
2	W	29·93	29·81	79	56	75	60	—	
3	SW	29·78	29·72	76	51	76	54	38	—
4	NW	29·75	29·55	73	49	69	55	—	—
5	S	29·53	29·42	71	49	73	55	—	26
6	NW	29·85	29·53	73	54	69	55	—	1
7	W	29·92	29·91	74	49	72	54	—	
8	SW	29·89	29·87	75	53	70	54	50	6
9	NW	30·10	29·89	70	49	68	51	—	—
10	Var.	30·10	30·07	76	57	71	56	—	—
11	SE	30·07	29·98	79	51	77	54	30	
12	SW	29·96	29·89	80	54	82	56	—	
13	NW	30·08	29·95	72	48	72	50	—	—
14	NW	30·08	29·83	72	57	68	59	42	—
15	NW	29·83	29·78	76	51	71	56	—	
16	NW	29·82	29·80	70	50	66	54	—	
17	W	29·82	29·78	76	52	71	55	—	
18	NW	30·05	29·82	75	47	73	50	46	
		30·17	29·40	82	47			3·42	2·61

NOTES.—Seventh Mo. 23. Continued heavy rain for above two hours p. m. with distant thunder. (This was about Bromley, in Kent, where a house was struck with lightning.) 24. A heavy thunder shower about 3 p. m.: rainbow. 25. Windy, cloudy, rainbow: broad diverging shadows on a coloured twilight, with *Cirrostratus* and haze to the S. 26. Fair a. m.: at noon began a steady rain with distant thunder: in the evening, several distinct *Nimbi*, in particular a well formed one in the NE. 27. *Cumulostratus* a. m.: rain p. m., with distant thunder: evening distant *Nimbi*, and a rainbow: much colour, with broad shadows in the twilight. 28. Much dew: *Cumulus*, with

Cirrus: at sunset a calm air, with large plumose *Cirri,* highly coloured. 29. Clear day, the wind passed from S to E: twilight brilliant with dew: the New Moon showed a well-defined disc at 8h. 30m. p. m. 30. *Cumulus,* with *Cirrus* passing to the inferior modifications: in the evening, on the S horizon, *Cumulus,* mixed with *Cirrostratus* and haze, the twilight of a pink colour: it lightened frequently before ten at night very far in the SE, with the wind S.

Eighth Mo. 1. Rain at 5 a. m. succeeded by a close canopy of *Cumulostratus:* at sunset, *Cirrus* with *Cirrocumulus:* twilight opake, somewhat orange coloured. 2. Much the same phenomena as yesterday. 3. Some drizzling showers, with wind, a. m.: sunset very dark, the sky being full of broken *Cumuli:* night windy. 4. Windy a. m., with *Cumulus,* which, p. m. inosculated with *Cirrostratus* above. 5. Rain early, the wind S: in the evening (after several showers) clouds in various modifications, the wind W, with lightning to the S. 6. Much wind at NW, with *Cumulus:* a shower p. m. 8. Close *Cumulostratus* most of the day: rain, evening. 9. Wind brisk at NNW, a. m.: at noon, the upper clouds were perceived not to move with this wind, and at evening it fell calm: there were now in the sky rose-coloured *Cirri* in stripes, from SE to NW, with *Cirrostratus* and *Cumulostratus* in a lower region: twilight orange, surmounted with rose colour. 11. A *Stratus* after sunset, with *Cirrostratus* remaining above: small scintillant meteors now appeared, falling almost directly down, and seeming to originate low in the atmosphere. 13. *Cirrus* and *Cirrocumulus* abounded: there was a slight shower about noon. 14. Overcast, a little rain after sunset. 16. The *maximum* of temperature occurred at 9 a. m. 17. Overcast: windy.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height	30·17 in.
	Least	29·40 in.
	Mean of the period	29·799 in.
Thermometer:	Greatest height	82°
	Least	47°
	Mean of the period	63·88°
Evaporation		3·42 in.
Rain		2·61 in.

THUNDER STORMS.

July 23.—Between one and two, the city of *Glasgow* was visited by a heavy shower of rain, accompanied by tremendous peals of thunder.

Between three and four o'clock of the afternoon of July 24, *Scarborough* was visited with most tremendous thunder and lightning.—(PUB. LEDGER.)

[Description of a Hurricane from a Bermuda Paper.]

" *Nassau, (Bahama,) August* 1, 1813.

" The dawning of Monday the 26th ult. exhibited a serenity, calculated to lull to sleep the fears of the most wary; and the breeze freshening on the sky, it was hailed by all as a happy relief from the extreme sultry heat of the atmosphere.—

" At ten o'clock the wind increased, and continued increasing, accompanied by short showers of rain. It gained considerably in the course of an hour; at eleven it blew a strong gale, and some of the shipping in the harbour appeared uneasy at their anchorage; but it was not until twelve o'clock that it attained the height which constitutes the commencement of a hurricane, and which soon became evident by its destructive effects upon the waters, and upon the shore. Some of the vessels in the harbour were driven from their moorings, and houses began to totter upon their foundations. At about half-past two o'clock the hurricane attained its greatest height, and its *acme* continued, without interval, until five, when it suddenly ceased; and *in the space of half an hour succeeded a calm* so perfect, that it can be compared only to that of death after the most dreadful convulsions.

" The Government-house, the greater part of the other public buildings, a great number of other houses, the wharfs, the orchards, and gardens, were found either wholly or partly destroyed; and all the vessels in the harbour (two excepted) were driven on shore or sunk.

" The inhabitants of the colony, well knowing the nature of hurricanes, took every precautionary measure within their reach during the calm or lull, *to prepare for its second part, expected from the SW,* which set in with great fury at about six o'clock, and continued until midnight, when it considerably abated, and soon after totally ceased. The SW storm differed from the north-eastern one, by appearing *in heavy blasts of a few minutes' duration,* repeated after lulls of equal length, until it so ceased: whereas the first storm *raged without intermission.* This last, however, nearly completed the general ruin, and it is believed that if it had raged another hour, scarcely a house would have remained standing in this city; which, before the storm, was considered, *in proportion to its size and population,* to be one of the most wealthy and most flourishing in the world."

Hurricanes appear to have been felt about this time, through the whole extent of atmosphere between the two great divisions of the American continent. I have selected this from a number of reports in the papers, for the purpose of attempting to explain some peculiar and characteristic facts contained in the narrative.

The present storm seems to have consisted chiefly in a prodigious aggravation (for the time) of the velocity and force of the currents, which ordinarily proceed to, and return from, the great equatorial stream. After an obstruction for some considerable time of this interchange of air, causing oppressive heat at the Bahamas, rarefaction suddenly ensues to the SW of these islands; a portion of the tropical air is rapidly elevated, and the air which supplies its place from the NE, from some cause not as yet apparent, flows in a *confined and* *accelerated* stream. That this stream, however, originates in the same cause with the ordinary trade wind, and is destined to supply the void caused by rarefaction to leeward, is evident; for it commences with the rising sun, assumes its greatest force at the time when the heat of the day is established, and ceases in the evening. This part of the hurricane blows with steady, unintermitting violence, in which respect it agrees with our own north-easterly gales. When it is spent, *a stratum of air*, which had been interposed between it and the returning tropical current, suddenly shows itself; which, having been balanced between these opposite impulses, obeys neither, but appears (as it is) at rest as to horizontal movement. But this calm is of short duration: the superior SW wind comes down, and the moment it touches the earth, the storm is re-established. A difference however is now observable in the movement: for this inundation from the south, being urged by an unsteady force from behind, comes on in successive billows, like the tide making on the shore; and in this respect agrees precisely with our own southerly storms. At length, this current having spent on the earth the momentum it had acquired from the circumstances of the preceding day, it also ceases, and things return to their ordinary state.

TABLE LXXXVI.

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9th mo. Sep. 17	SE	30·22	30·11	72°	56°	70°	54°	—	
18	SE	30·11	30·01	70	46	67	46	—	
19	E	30·01	29·92	72	43	67	42	—	
20	NE	29·90	29·89	66	45	67	46	—	
21	NE	29·91	29·87	70	50	65	51	29	—
22	N	29·96	29·90	68	48	65	49	—	6
23	NE	30·01	29·96	64	54	61	52	—	14
24	NE	30·11	30·01	66	47	63	47	—	—
25	NE	30·11	30·03	62	51	60	51	20	
26	NE	30·03	30·01	67	47	65	49	—	
27	E	30·01	29·94	66	44	65	45	—	
28	NE	——	29·94	60	47	60	47	—	—
29	NE	30·12	——	62	47	61	47	21	
30	NE	30·12	29·84	62	40	60	37	—	
10th mo. Oct. 1	NE	29·84	29·68	61	41	61	41	—	
2	NE	29·70	29·67	59	49	62	49	—	—
3	SE	29·80	29·70	62	48	60	51	21	—
4	SE	——	——	62	52			—	—
5	W	29·78	29·65	66	54			—	
6	SW	29·80	29·77	66	52			—	
7	SW	29·52	29·47	65	51			—	—
8	W	29·73	29·46	60	54			—	2·50
9	Var.	29·43	29·42	61	49			—	
10	SW	29·44	29·15	65	45			—	4
11	W	29·46	28·93	60	48			—	—
12	SW	29·75	29·55	60	41			—	—
13	SW	29·55	29·34	58	52			—	45
14	NW	29·62	29·52	58	34			—	29
15	S	29·58	29·21	51	33			28	47
		30·22	28·93	72	33			1·19	3·95

NOTES.—Ninth Mo. 19, 20. Breezes by day: much dew by night. 21. Cloudy quite to sunset: a few drops of rain. 22. A breeze a. m.: some clouds, followed by a sudden shower p. m.: rain in the night. 23. Windy: showers. 24. Much wind. 25. Windy: cloudy. 26. Overcast a. m., clear p. m.: luminous twilight, with *Cirrus* and *Cirrocumulus*. 27. Morning twilight somewhat coloured but less luminous: forenoon overcast: p. m. clear: at sunset fascicular *Cirri*, arranged from W to E, the wind E, nearly calm: after these appearances, lightning far to the S, E, and SW. 28. Cloudy, with a few drops.

30. A pink twilight, with dense, coloured *Cirri*. For three days past, a steady NE breeze, with pretty much sunshine.

Tenth Mo. 1. Overcast a. m., wind N: after sunset *Cirrocumulus* passing to *Cirrostratus*, a corona about the Moon, and a small meteor passing westward. 2. Overcast most of the day: a few drops p. m. 3. *Cirrus* with *Cumulostratus:* twilight opake and orange-coloured: the roads have of late become excessively dry, and the dust raised from them floats in great quantities in the air. 4. Early this morning began a steady rain, which continued till after sunset. 5. Fine day: lunar halo at night. 6. Cloudy. 7. A considerable storm of thunder and lightning early this morning, followed by much rain. 8. Fair a. m., wet p. m. 9. Fine. 10. Wet with a fair interval about noon. 11. Wet a. m., fair p. m. 12. Fine a. m., showery p. m. 14. Fair. 15. Rainy.

RESULTS.

Prevailing Winds Easterly and drying, to the Moon's first quarter: after which they became Westerly, and brought much rain.

Barometer:	Greatest height	30·22 in.
	Least	28·93 in.
	Mean of the period	29·752 in.
Thermometer:	Greatest height	72°
	Least	33°
	Mean of the period	55·28°
Evaporation		1·19 in.
Rain		3·95 in.

The rain of the 4th of the Tenth month having put a period to a fair season of some weeks continuance, I availed myself of a journey I made immediately after it, to endeavour to ascertain by inquiry how far it had extended. I found it had rained on that day from morning to night through the whole distance from London to York; as likewise further north, quite to the Tyne, and across the island from Cheshire to Northumberland. It having been likewise a very wet day on the south coast, the conclusion seems to be fair, that the whole of England, at least, was on this occasion irrigated at once, by the introduction of a current from the Atlantic, which now *displaced* completely the easterly breeze previously deflected from the NE to the SE; both currents on this occasion probably depositing the excess of water with which they were charged.

WEATHER AT GIBRALTAR.

Gibraltar, October 5.—This has been the coolest summer ever remembered, the rains have fallen early; and the weather now is not warmer than in England in the autumn.—The mornings, for some days, have been cold enough to render a fire agreeable, with a *NW* wind, and the most delightful, pure, and serene sky that can possibly be imagined.

TABLE LXXXVII.

1813.		Wind.	Pressure.		Temp.		T.No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 10th mo. Oct.	16	W	29·20	28·74	51°	38°	52°	43°	—	19
	17	SW	29·01	28·64	52	42	56	38	—	8
	18	NW	29·55	29·44	58	35	48	28	—	
	19	Var.	29·66	29·55	50	27	50	29	—	
	20	E	29·66	29·50	52	42	52	42	12	14
	21	Var.	29·76	29·50	54	43	54	43	—	—
	22	NE	29·89	29·45	53	40	59	46	—	10
	23	E	29·91	29·86	52	51	54	50	12	
	24	NE	29·86	29·82	57	45	53	46	—	
	25	NE	30·12	29·82	53	37	51	37	—	—
	26	NE	30·12	29·85	47	36	46	39	—	
	27	NE	29·79	29·77	41	34	42	31	17	6
	28	N	29·90	29·79	46	33	44	32	—	
	29	E	29·90	29·70	47	27	46	25	—	—
	30	Var.	29·70	29·00	52	30	52	30	—	50
	31	W	29·25	29·00	56	30	51	34	—	—
11th mo. Nov.	1	W	29·68	29·25	49	31	48	25	—	—
	2	NW	29·83	29·41	49	35	46	40	8	9
	3	SW	30·32	29·83	51	29	48	32	—	—
	4	W	30·34	30·32	45	27	46	25	—	
	5	S	30·32	29·95	47	29	49	27	—	
	6	E	29·95	29·70	45	35	49	31	14	6
	7	SW	29·70	29·37	53	41	53	41	—	17
	8	SW	29·42	29·37	58	43	55	42	—	22
	9	W	29·62	29·42	51	42	51	42	—	—
	10	W	29·60	29·48	57	43	58	45	—	10
	11	SW	29·65	29·51	54	44	55	47	17	—
	12	W	29·49	29·45	54	32	55	35	—	35
	13	SW	29·58	29·49	46	29	45	32	—	
	14	W	29·58	29·17	43	33	44	33	3	8
			30·34	28·64	58	27			0·83	2·14

NOTES.—Tenth Mo. 16. Fine morning: wet p. m.: lightning in the evening. 17 Showery. 18. Fine a. m., shower p. m. 19. Hoar frost: fair day after misty morning. 20. Cloudy a. m., much wind at E. 22. About half-past 7 p. m. a bright blue meteor appeared in the N, and passing to westward with a steady and rather slow motion, became extinct: there were traces of *Cirrostratus* clouds, which increased afterward. 23. Maximum of temperature at 9 a. m.: cloudy, with a breeze. 24. Overcast. 25. Cloudy a. m., clear p. m.: during the twilight there was abundance of red haze, first in the E horizon over clouds in that quarter, then at a considerable elevation in the W: it ended more clear and orange coloured. 26. Cloudy at intervals. 27. Windy a. m. 28. Hoar frost, which being examined, was found to consist not of spiculæ attached to the herbage, *but of the drops of dew frozen clear and solid.* 29. Hoar frost: *Cumulostrati* followed by *Nimbi:* one of the latter approaching from the E at 4 p. m, exhibited a double rainbow, on a ground of purple. 30. *Spicular hoar* frost: very misty: clear at noon: *Cirrostratus* and a little rain p. m : wet and stormy night. 31. Windy a. m.: *Cirrus* with *Cumulus:* a shower about four, with a fine bow.

Eleventh Mo. 1. Hoar frost. 2. *Granular hoar frost:* very clear sunrise: clouds at noon: rain p. m., very windy night. 3. Sunshine, a. m. Wind NNW, a shower p. m. 6. Calm clear weather, with hoar frost these three days, the wind now rising. 7. Small rain at intervals: a *solar halo* of large diameter p. m. 8. Fair with wind a. m., but before 4 p. m. dark *Nimbi* and rain beginning: being then on the south side of London, I was surprised with a flash of lightning and a sharp peal of thunder: about half-past six, a glimpse of a meteor passing to the W: it was said to lighten about this time. 9. Windy. 11. Stormy night. 12. Windy: cloudy p. m., wet. 13. Hoar frost. 14. The same, with a crystallized rime on the shrubs.

RESULTS.

Winds Variable: the Easterly prevailed in the former, the Westerly in the latter part.

Barometer:	Greatest height	30·34 in.
	Least	28·64 in.
	Mean of the period	29·625 in.
Thermometer:	Greatest height	58°
	Least	27°
	Mean of the period	43·41° [Lab$^{y.}$ 43·37°]
Evaporation		0·83 in.
Rain		2·14 in.

THUNDER STORMS, &c.

Between three and four o'clock on Tuesday morning, (Nov. 9,) Brighton was visited by a dreadful storm of wind and rain, accompanied by some severe strokes of thunder and vivid flashes of lightning.

Extract of a letter from an Officer serving in the Mediterranean :—" On the 2nd of September, the Hibernia was struck by lightning, which *set fire to the main-top-mast and fore-rigging*, but the rain falling in torrents at the time, shortly extinguished it: five men were knocked done, but none killed. The Swiftsure, Union, Ocean, and Leopard, *all had their main-top-masts shattered to pieces.* Not a life was lost on board any of them, although many men were struck down, slightly hurt."—(PUB. LEDGER.)

TABLE LXXXVIII.

1813.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 11th mo. Nov.	15	NW	29·38	29·20	47°	34°	46°	34°	—	
	16	NE	29·10	29·02	45	35	45	35	—	13
	17	NW	29·46	29·02	43	30	43	32	—	—
	18	W	29·65	29·46	44	32	42	34	—	
	19	SW	29·72	29·65	51	37	52	40	10	15
	20	S	29·86	29·72	56	49	56	48	—	
	21	S	29·88	29·86	55	47	55	46	—	
	22	NW	29·93	29·88	55	37	54	35	—	
	23	E	29·98	29·93	45	38	45	39	7	
	24	NE	30·08	29·98	45	33	45	32	—	—
	25	N	30·08	30·05	43	37	44	35	—	
	26	NE	30·05	30·02	45	31	43	31	—	
	27	NE	30·02	29·88	43	28	42	35	—	
	28	E	29·95	29·85	37	34	37	35	—	
	29	E	29·90	29·85	40	25	39	24	—	
	30	SE	29·85	29·50	35	29	34	27	—	
12th mo. Dec.	1	E	29·50	29·42	37	33	35	31	—	
	2	SE	29·42	29·09	40	37	39	34	12	12
	3	SE	29·37	29·09	43	40	42	38	—	—
	4	NE	29·44	29·37	44	40	42	36	—	—
	5	N	29·76	29·44	44	36	43	32	—	—
	6	N	29·78	29·77	44	36	43	33		20
	7	NE	29·76	29·72	44	41	42	37	2	3
	8	NE	29·86	29·72	44	40	44	38	—	—
	9	NE	30·05	29·86	44	39	43	37	—	—
	10	NE	30·18	30·05	43	37	41	35	4	14
	11	NE	30·18	30·05	42	37	40	35	—	
	12	SE	30·05	29·82	37	29	37	28	—	
	13	NW	29·93	29·82	37	26	34	23	2	
			30·18	29·02	56	25			0·37	0·77

NOTES.—Eleventh Mo. 16. A stormy night, after some rain. 17. Much wind a. m.: snow from 2 to 3 p. m., which remained through the night. 18. A fine day: at sunset much rose colour, with *Cirrostratus*. 19. Overcast at 8 a. m., the barometer falling: misty and drizzling. 22. Grey morning: fair day. 23. Misty, calm. 24. Overcast, drizzling. 25—27. Fine days: at sunset on the 27th, the wind being SE, the smoke of the city, in passing away in a body, swelled up into several distinct heaps, each of which inosculated at

ith a small cloud: this union was clearly the result of mu-

n, and it continued for great part of an hour: the clouds which at this time overspread the sky in great numbers were the remains of larger ones, which had in part evaporated, and now resembled *Cirrostrati:* those which were attached to the smoke became sensibly denser than the rest. 30. This month exhibited an unusual proportion of fine days.

Twelfth Mo. 2. Cloudy: a steady breeze: some light snow and sleet: rain in the night. 3. Overcast: some rain. 4, 5. Cloudy, misty: rain at intervals. 8. Small rain a. m.

RESULTS.

Prevailing Winds Easterly.

Barometer:	Greatest height	30·18 in.
	Least	29·02 in.
	Mean of the period	29·728 in.
Thermometer:	Greatest height	56°
	Least	25°
	Mean of the period	39·63° [Laby. 38·72°]
Evaporation		0·37 in.
Rain		0·77 in.

The latter part of this period has been remarkable for a general prevalence of the diseases commonly attributed to obstructed perspiration. The detail of these belongs properly to the medical reports: it may, however, be suitable here to point out the circumstances which appear to have contributed to this effect. I say *appear,* because there may exist modifications of the air capable of exciting disease, to the discovery of which none of the present means of examination are competent.

The wind, during the time alluded to, came in a moderate stream from the eastward; the barometer, which had been depressed, rising gradually. The sky was almost constantly overcast with *Cirrostratus;* beneath which the atmosphere was perceptibly full of diffused water, of the density of *dew,* quite down to the earth. The sun's rays thus intercepted, the temperature varied little from 40° by day or night; and evaporation was nearly at a stand. Electricity in such circumstances could not accumulate: hence, though it drizzled at intervals, the air never got cleared by showers.

Let us now apply these facts to the case. In health the matter of perspiration is thrown out on the skin in a fluid state, in a quantity and with a force proportioned to the state of the circulation. Here it has to evaporate in the common way of fluids; but it will do this very slowly, even at the common temperature of the skin, in an air already loaded with moisture. In such an air, too, the whole muscular system being relaxed, the heart and arteries act with less force. If it be, at the same time, only moderately cold, and void, in great measure, of light and electricity, it will want that exciting action on the nerves, which results from the *sudden* loss of heat, as well as from the application of the two latter *stimuli*. In a word, such an air, succeeding to a dry and clear air, will be a *sedative:* it will counteract, by constant, though insensible effects, the healthy energies even of the strong. The usual *sponging* operation on the skin being withheld, at the same time that the *vis a tergo* is lessened, we need not wonder that the matter of perspiration should stagnate in the fine extremities of the cuticular arteries, or be thrown on some internal secreting surface; that the skin should take on a state of spasm, and that fever and inflammation should ensue. Thus, without supposing in this case any *occult* quality in the air, we may trace a combination of qualities which may be reasonably thought to have made it productive of disease.

THUNDER STORMS, &c.

The Barfleur of ninety-eight guns, Sir E. Berry, was struck by lightning the latter end of October, in the Mediterranean. The fluid struck the foretop-gallant-mast, which it shivered to pieces; descended the foretop-mast and fore-mast, and proceeding through all the decks, tore up part of the lead at the light-room door, which is situated close to the magazine!—The destruction of the ship, however, was providentially averted.

November 17.—A Correspondent at Bridgewater says: "Wednesday last we were visited by a tremendous thunder storm: the lightning struck the spire of the church, and shivered it to pieces, the windows were broken, and the tiles were forced off the houses in every quarter. At Weston Zoyland, a short distance from this, the lightning much damaged the tower of the church; the windows were broken, and the church soon filled with thick smoke, which smelt so sulphureously, that the inhabitants throughout the town were greatly alarmed; the battlements were entirely thrown down, and some of the stones thrown to a distance of sixty yards.

PLYMOUTH, *November* 17.—It has blown a very heavy gale all last night and to-day from NW.

SCILLY, *December* 5.—On the 1st instant we experienced the most violent gale ever remembered, from SE, but it only lasted a short time. Three vessels in the Roads parted from their cables—no other accident.—(PUB. LEDGER.)

INSTANCE OF EXTRAORDINARY DROUGHT.

The island of Aruba, says a letter from Curaçao, of November 3, is at present in a most deplorable condition, on account of the scarcity of rain. *Within the last nine months only five showers have fallen;* and they have been so gentle, as to have had no visible effect on the parched soil. The trees on the island are withered and no longer bear; all traces of vegetation are gradually disappearing; and the efforts to raise corn, or esculent roots, have proved fruitless. A dreadful mortality had taken place among the cattle, as the few springs from whence they had been supplied were exhausted, and there was neither fodder nor water to keep them alive. The principal inhabitants had abandoned the island.

A letter from Curaçao, dated November 5, says:—"During the last ten months there has been no rain in this colony; a famine among the horned cattle has been the natural consequence. More than seventeen hundred head have been lost on some plantations. The lower classes and the slaves have been exposed to the prospect of famine.—(PUB. LEDGER, *February*, 1814.)

REPORTED LOSS OF A CARAVAN BY THE KAMSIN, OR HOT WIND OF THE DESERT.

The following is an extract from a letter from Smyrna:—"We have received intelligence of a dreadful calamity having overtaken the largest caravan of the season, on its route from Mecca to Aleppo. The caravan consisted of two thousand souls—merchants and travellers from the Red Sea and Persian Gulf, pilgrims returning from performing their devotions at Mecca, and a numerous train of attendants, the whole escorted by four hundred military. The march was in three columns.—On the 13th of August last they entered the great Arabian Desert, in which they journeyed seven days, and were already approaching its edge. A few hours more would have placed them beyond danger; but, alas! they were not permitted to return in safety. On the morning of the 23rd, just as they had struck their tents, and commenced their march, a wind rose from the NE, and blew with tremendous violence. They increased the rapidity of the march to escape the threatening danger; but the fatal Kamsin had set in. On a sudden, dense clouds were observed, whose extremity obscured the horizon, and swept the face of the desert. They approached the columns, and obscured the line of march. Both men and beast, struck by a sense of common danger, uttered loud cries. The next moment they fell beneath its pestiferous influence, lifeless corpses. Of two thousand souls composing the caravan, not more than twenty escaped this calamity.—They owed their safety to the swiftness of their dromedaries."—(PUB. LEDGER, *December*, 1813.)

TABLE LXXXIX.

1813.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 12th mo. Dec. 14	NW	29·93	29·87	35°	25°	31°	21°	—	
15	NW	29·87	29·49	38	26	35	25	—	
16	SW	29·49	29·35	49	40	45	36	—	—
17	S	29·35	29·14	51	50	53	47	2	19
18	SW	29·16	29·14	54	44	57	44	—	—
19	SW	29·28	29·16	50	35	49	33	—	
20	W	29·57	29·28	45	31	41	26	—	
21	NE	29·50	29·44	46	32	46	32	5	12
22	SW	29·77	29·50	47	36	46	34	—	
23	SW	29·89	29·77	47	38	47	38	—	—
24	SW	30·02	29·89	53	46	57	44	—	—
25	SW	30·28	30·02	51	41	50	39	1	9
26	NW	30·49	30·28	41	28	44	38	—	
27		30·49	30·38	31	25			—	
28		30·35	30·31	30	24			—	
29		30·36	30·35	30	19			—	
30	NW	30·36	30·32	32	22			—	
31	N	30·32	30·17	35	22			—	
1814. 1st mo. Jan. 1		30·17	29·86	31	20			—	
2		29·86	29·71	32	28			—	
3		29·71	29·60	33	29			—	
4	E	29·60	29·20	33	25			—	
5	NE	29·12	29·08	33	32			—	—
6	N	29·52	29·12	34	15			—	—
7	NW	29·66	29·60	28	11			—	
8	NW	29·65	29·62	31	12			—	
9	NW	29·79	29·65	29	8			—	
10	NW	29·89	29·79	26	21			—	
11	SE	29·89	29·54	25	15			—	
12	N	29·88	29·49	27	15			6	1·28
		30·49	29·08	54	8			0·14	1·68

Notes.—Twelfth Mo. 14, 15. Hoar frost: clear days. 16, 17. Cloudy: rain at intervals: *bees quit the hive in unusual numbers* [ad alvum exonerandum?] 18. Windy: some rain. 19. Very misty a. m. 20. Hoar frost. 21. The same, followed by wind and rain. 23—25. Misty: drizzling rain at intervals. 26. A clear morning, with much dew: the barometer rising fast: *Cirrus* and *Cirrostratus:* orange-coloured twilight. 31. From the 26th to the 29th we had a succession of thick fogs, with a calm air, or at most a breeze from the NE: yesterday the air cleared a little, and to-day has been fine: a display of *Cirrus* clouds, with much red in the morning and evening sky: the peculiar smell of electricity has been perceptible of late, when the air cleared up at sunset.

1814. First Mo. 4. The mists,which have again prevailed for several days, and which have rendered travelling dangerous, are probably referable to the modification *Stratus.* The air has been, in effect, loaded with particles of freezing water, such as in a higher region would have produced snow. These attached themselves to all objects, crystallizing in the most regular and beautiful manner. A blade of grass was thus converted into a pretty thick *stalagmite:* some of the shrubs, covered with spreading tufts of crystals, looked as if they were in blossom; while others, more firmly incrusted, might have passed for gigantic specimens of white coral. The leaves of evergreens had a transparent varnish of ice, with an elegant white fringe. Lofty trees, viewed against the blue sky in the sunshine, appeared in striking magnificence: the whole face of nature, in short, was exquisitely dressed out in frost work. When the sun, at length, broke through, and loosened the rime, it fell unmelted, and lay in heaps under the trees; after which a deep snow, brought by an easterly wind, reduced the whole scenery to the more ordinary appearances of our winter. 5. Snow early, and during the day; the wind increasing in force from the NE. 6. A dark morning. Snow falling in some quantity to-day, with the temperature at the surface 33° or 34°, presented an amusing phenomenon, which was pointed out by my children. Instead of driving loose before the wind, it was collected occasionally into a ball, which rolled on, increasing till its weight stopped it: thousands of these were to be seen lying in the fields, some of them several inches in diameter. 9. A somewhat misty morning: the snowy landscape visible to the distance of about a mile only, exhibited a bluish tint. A thermometer, *placed on the snow,* fell this night to 6°: and I am informed that at Croydon a temperature of 5° was observed by a thermometer at the usual elevation from the ground: the time 11 p.m. 11. Very red sunrise: a steady breeze at SE till evening. Minimum temperature *on the snow* 11°. 12. *Cumulus* and *Cirrostratus* clouds. Minimum temperature *on the snow* 12°. The River Lea is now firmly frozen, and the Thames so much encumbered with ice as that navigation is scarcely practicable.

RESULTS.

Winds Variable: a considerable interval calm.

Barometer:	Greatest height . .	30·49 in.
	Least	29·08 in.
	Mean of the period .	29·757 in.
Thermometer:	Greatest height . .	54°
	Least	8°
	Mean of the period .	32·36° [Lab^{y}· 31·85°]
Evaporation		0·14 in.
Rain, (with melted snow and rime)		1·68 in.

There was an eruption of Mount Vesuvius, on the 25th and 26th of the Twelfth month.

TABLE XC.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Min. on the Snow.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1st mo. Jan. 13	NE	30·13	30·03	30°	14°	30°	15°	8	
14	NE	30·03	29·61	26	19	27	22	14	
15	E	29·61	29·30	31	20	31	23	21	
16	NE	29·63	29·25	32	22	33	18	19	—
17	N	29·25	29·14	30	11	32	14	8	—
18	E	29·14	29·07	36	30	34	32		—
19	NE	29·42	29·07	34	28	35	29		—
20	NE	29·76	29·42	33	14	33	16	6	—
21	Var.	29·76	29·72	25	14	26	20	11	—
22	N	29·82	29·71	32	8	30	11	6	—
23	N	29·77	29·69	35	15	32	11	11	—
24	Var.	29·88	29·77	33	24	29	24		1·25
25	Var.	29·88	29·60	36	20	35	26		—
26	SW	29·60	29·22	36	33	39	33		12
27	W	29·16	29·11	39	33	39	34		20
28	Var.	29·11	28·54	40	28	38	31		—
29	Var.	28·94	28·22	41	32	45	32		86
30	W	29·32	28·94	40	25	38	28	20	
31	NW	29·80	29·32	38	26	36	30		—
2nd Mo. Feb. 1	NW	30·01	29·90	36	26	37	30		6
2	N	30·04	30·02	41	24	39	25	22	
3	N	30·01	29·98	33	19	34	19	2	
4	W	30·15	30·11	32	19	33	27	12	
5	SW	30·11	29·68	38	29	41	34		8
6	NW	29·61	29·51	44	33	44	30		4
7	W	29·65	29·48	40	32	42	38		—
8	SW	29·70	29·36	50	35	48	38		5
9	SW	29·94	29·70	47	40	46	40		
10	SW	29·98	29·94	49	42				
11	S	29·95	29·90	50	35	53	36		
		30·15	28·22	50	8			2	2·66

Notes.—First Mo. 13. Much wind last night: very fine day: *Cumulus* and *Cirrostratus*. 14. Somewhat cloudy a. m. 15. Overcast with *Cirrostratus:* light breeze. There being no evaporation to-day, the surface of the snow is a little warmer than the air. 16. Overcast: a slight thaw, from the warmth of the earth: at evening snow and frost again. 17. A clear day: *Cirrus* and *Cirrostratus* in the evening, with a low *Nimbus,* or two, forming. At sunset, the temperature being 18°, there was a bed of haze in the E, like that which accompanies the fall of *dew,* but much more dense, and singularly coloured. It was chiefly of an indigo blue, but passed below into opake white, and above into a faint red, more transparent. [I have since found this bluish haze to be *snow* forming in the air.] 18. A snowy morning: small snow and sleet through the day. 19. A snowy day. 20. Snow: the wind strong at NE. 21. At 8 a.m. beginning to snow again. In the drifts the snow is many feet deep. This day proved fine and calm: the wind, at times, SW. 22. A little snow in the morning: fine day: strong breeze, with various clouds. 23. Snow, morning and evening. There was a fine exhibition of clouds: as *Cumuli*, well formed, but with little colour; the superior modifications, including the *Cirrocumulus;* and several distinct *Nimbi*. 24. The sky as yesterday: snow a. m. the wind brisk: about 2 p. m. a squall, with plenty of snow. 25. A fine elevated grey sky, a. m.: then, *Cirrus* and *Cirrostratus*, the wind veering by N to W. It has had lately much tendency to this quarter at night. 26. A hollow wind at SW: snow, followed by small rain. 27. A misty thaw: a little rain at intervals: wind and rain in the night. 28. Misty a. m., with rain: the wind W: after this a little snow: then fair and frosty after sunset. 29. Stormy: the wind SE with snow early: then steady rain, followed by more snow. The *minimum* of pressure occurred after 6 p. m. It was not confined to a small space of time. As the barometer began to rise, the wind came round by SW to NW, and blew with great violence till near morning. 30. A fine day: strong breeze, with clouds: at sunset a sprinkling of opake hail. 31. Fair day: but at 7 p. m. a sudden heavy snow shower.

Second Mo. 2. Hoar frost. 3. A very fine sunny day, followed by bright moonlight. A thermometer, at an intermediate height between the standard one and that on the snow, gave 14° as the minimum. The latter instrument at 8 a. m. had risen only to 4°, and was thickly covered with *rime*, although at night there had been an appearance of strong evaporation. 4. Sunshine, and fair night. About 9 p. m. a colourless halo, of the largest diameter, with *Cirrus* clouds. At half past ten a small coloured halo, with *Cirrostratus*. The temperature on the snow being 12°, the wind W, a breeze, I now exposed in a metallic dish, close to the thermometer, two thousand six hundred grains of snow (which had become hard by freezing) in two or three masses. At half-past eight, or in ten hours, the temperature having risen to 28°, it had lost twenty-seven grains in weight. 5. Crimson sky at sunrise: hollow wind: snow and sleet. 6. A gale from SW, with showers of rain: at evening it cleared up, and blew from NW. 7—11. *Cirrostratus* and *Cirrocumulus:* red sky at sunrise: gales of wind, and a few showers.

RESULTS.

Winds Northerly in the fore part of the period, variable in the middle, and in the conclusion Southerly.

Barometer:	Greatest height . .	30·15 in.
	Least	28·22 in.
	Mean of the period .	29·591 in.
Thermometer:	Greatest height . .	50°
	Least	8°
	On the snow, least .	2°
	Mean of the period .	31·31° [Lab$^{y.}$ 31·93°]
Evaporation (from water containing a little salt) . . .		0·32 in.
Rain and melted snow . . .		2·66 in.

THE THAMES FROZEN OVER.

January 15.—The masses of ice and snow had accumulated in such quantities at London Bridge, on the upper side, yesterday, that it was utterly impossible for barges or boats to pass up.

January 20.—During the whole of this week, that part of the Thames below Windsor Bridge, called Mill River, has been frozen over, and has been crowded with persons skaiting.

February 3.—The confidence of the public in the safety of the passage over the frozen surface of the Thames was yesterday increased. All the avenues from Cheapside to the different stairs on the banks of the river were distinguished by large chalked boards announcing " a safe footway over the River to Bankside;" and, in consequence, thousands of individuals were induced to go and witness so novel a spectacle, and many hundreds had, what we cannot help terming the fool hardiness, to venture on the fragile plain, and walk, not merely over, but from London Bridge to Blackfriars'. Several booths, formed of blankets and sail-cloths, and ornamented with streamers and various signs, were also erected in the very centre of the river, where the visitors could be accommodated with various luxuries. In one of the booths, the entertaining spectacle of a *sheep roasting* was exhibited.

February 7.—Friday several printers brought presses and pulled off various impressions, which they sold for a trifle:—

e. g. " Printed to commemorate a remarkably severe frost, which commenced December 27, 1813, accompanied by an unusual thick fog, that continued eight days, and was succeeded by a tremendous fall of snow, which prevented all communication with the Northern and Western Roads for several days. The Thames presented a complete field of ice between London and Blackfriars' Bridges, on Monday the 31st of January 1814.—A Fair is this day (February 4, 1814) held, and the whole space between the two Bridges covered with spectators."—(PAPERS.)

This " field of ice," was, indeed, a very rugged one, consisting of masses of drifted ice of all shapes and sizes, covered with snow, and cemented together by the freezing of the intermediate surface. The deceitfulness of the latter caused (as is too common on such occasions) the loss of some lives by drowning. The following passage, announcing the opening of the river soon after, is worthy of preservation on account of the spirit in which it is written.

February 11.—We are happy to see the lately perturbed bosom of Father Thames resume its former serenity. The busy oar is now plied with its wonted alacrity, and the sons of Commerce are pursuing their avocations with redoubled energy. Cheerfulness is seated on the brow of the industrious labourer: those who were reduced to receive alms as paupers, again taste the sweets of that comparative independence with which labour crowns the efforts of the industrious. What a fruitful source of congratulation does this prospect afford! Nor can the contemplative mind dwell on the subject without feeling gratitude to that beneficent Being, who, in a time of such calamity, opened the hearts of the benevolent to administer, from their abundance, to the necessities of their poorer brethren, and thus add cement to the bond by which all mankind are linked together.

The mischief done on the river, during the late frost, is greater than can be remembered by the oldest man living. Among the craft alone, it is calculated to amount to upwards of 10,000*l.* independent of the damage sustained by the cables, tackle, &c. of the shipping.

January 11.—The quantity of snow which has fallen in the upper parts of Hampshire, and on the Hind Head, is very great, lying in many places fifteen feet deep.—(PUB. LEDGER.)

Similar accounts of the accumulation of snow, more especially on the *western* side of the island, as also of the freezing of the large rivers, &c. abounded in the public prints, within two weeks from this date.

In Dublin, a fog enveloped the city at the same time that it prevailed here, and was so extremely dense, that a great number of serious accidents were the consequence.

Dublin, January 13.—From the uncommon depth of the snow, the streets appeared yesterday almost deserted: none were to be seen abroad but an occasional messenger, a walking physician, a letter carrier, or a bank runner, scrambling through the snow to their several vocations.

February 21.—A letter from *Heligoland* mentions, that the intense frost had there, as in England, been preceded by thick fogs, and heavy falls of snow. The latter was ten and twelve feet deep. The frost, which had lasted six weeks, had on the 8th, every appearance of continuance.—(PAPERS.)

TABLE XCI.

1814.		Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
			Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2nd mo. Feb.	12	S	29·94	29·92	48°	39°			—	
	13	SE	29·91	29·87	46	37	47°	37°	—	10
	14	NE	30·07	29·91	41	29	42	31	—	
	15	NE	30·13	30·07	38	29	40	30	—	
	16	NE	30·40	30·13	39	28	41	29	—	
	17	NE	30·42	30·39	33	19	33	23	—	
	18	NE	30·39	30·25	39	30			—	—
	19	NE	30·41	30·25	40	23	40	22	—	
	20	Var.	30·41	30·35	31	18	35	20	—	
	21	SE	30·30	30·25	34	19	36	20	—	
	22	E	30·30	30·22	32	21			—	
	23	SE	30·22	30·15	32	18	34	20	—	
	24	E	30·20	30·12	33	18	33	15	—	
	25	SE	30·12	30·02	34	21	39	21	—	
	26	NE	30·08	30·00	35	24	37	19	—	
	27	SE	30·00	29·83	39	26	40	30	—	
	28	SW	29·83	29·12	41	30			25	3
3rd mo. March	1	Var.	29·07	29·05	45	31			—	—
	2	SW	29·05	28·97	45	31			—	—
	3	E	29·28	29·05	42	30			—	
	4	NE	29·59	29·28	35	31			—	
	5	NE	29·88	29·59	34	28			—	—
	6	NE	29·88	29·77	34	28			—	
	7	E	29·85	29·77	32	21			—	—
	8	NE	29·85	29·76	33	26			—	—
	9	NE	29·76	29·66	34	27			—	—
	10	NW	29·66	29·58	35	29			—	—
	11	NE	29·70	29·45	41	32	36	28	—	—
	12	NE	29·99	29·70	39	21	35	22	—	
	13	N	30·18	29·99	38	30	39	30	28	82
			30·42	28·97	48	18			0·53	0·95

NOTES.—Second Mo. 12. Cloudy. At half past 10 a. m. after a peculiarly unpleasant atmosphere, with a breeze from SE, we had a continued *shower* of fragments of *burnt paper*, descending from an elevation which the eye could not appreciate: it was found to originate from the burning of the Custom House, (distant in a right line about five miles S,) at which there happened an explosion of gunpowder. 13. Misty morning. 14. *Cumulus* clouds, beneath *Cirrocumulus* and *Cirrostratus*. 15. Fine morning: *Cumulus:* breeze: evening twilight clear orange, and the stars brilliant. 16. Cloudy morning: strong breeze: fine clear day. 17. Fine day: *Cumulus* with *Cirrus*. 18. Much hoar frost: fine morning: some rain, evening. 19, 20. Hoar frost. 21. The same: the moon visible, and very well defined at 6 p. m. 22, 23. Hoar frost. 24. The same: *Cirrus* clouds, in parallel stripes from N to S all day: minimum temperature at the laboratory, Stratford, 15°. 25—27. Hoar frost: *Cirrus,* in stripes from N to S: lunar halo. 28. *Cirrostratus* appears: the stones grow moist, and the wind has a hollow sound.

Third Mo. 1. Damp and cloudy: hollow wind: sleet, p. m. 2. Rain and sleet at intervals. 3—8. Snow at intervals: the country has become again white with snow. 9. Snow more plentiful in the night. 10—12. Snow at intervals: which, in northern exposures, lies to some depth.

RESULTS.

Prevailing Winds Easterly.

Barometer:	Greatest height	30·42 in.
	Least	28·97 in.
	Mean of the period	29·889 in.
Thermometer:	Greatest height	48°
	Least	18°
	Mean of the period	31·93° [Lab$^{y\cdot}$ 32·62°]
Evaporation (the water in the gauge being most of the time solid)		0·53 in.
Rain and melted snow		0·95 in.

Storms.

Monday morning, February 21, about four o'clock, the town of Uttoxeter was much alarmed by a most violent storm of wind and hail, which was immediately succeeded by a blaze of lightning, particularly remarkable for its duration. The report which accompanied it, resembled the firing of three cannons in quick succession.

Plymouth, *March* 13.—Arrived the Insolent brig, of fourteen guns, Captain Brazier, from Passages, having thrown her guns overboard, and sustained considerable damage in her masts and rigging, in a tremendous gale, which commenced in the Bay of Biscay on the 28th ult. and continued to the 4th inst.

Destructive Inundation in the East Indies.

Extract of a letter from Surat:—"Accounts have been received from Gurry, which mention a dreadful calamity, but, alas! of too frequent occurrence in this country. On the 12th of February, the Nerbudda unexpectedly, and during the night, overflowed its banks, and swept away upwards of fifteen villages. The calamity was so sudden that the inhabitants, their houses, furniture, and cattle, shared one common fate. It is difficult to compute the number of human lives lost; but it is supposed to exceed three thousand."—(Papers.)

TABLE XCII.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 2nd mo. March 14	NE	30·34	30·22	36°	30°	36°	30°	—	
15	NE	30·42	30·34	37	30	37	31	—	
16	NE	30·42	30·32	40	29	37	33	—	
17	NE	30·32	30·23	39	28	37	28	—	
18	NE	30·23	30·06	37	29			—	
19	NE	30·06	29·78	35	30			—	
20	SE	29·78	29·65	49	35	46	35	—	38
21	SE	29·65	29·60	45	41	47	42	12	—
22	SW	29·75	29·60	55	35			—	—
23	SW	29·75	29·73	55	34	52	42	—	—
24	SW	29·61	29·59	48	40	52	41	—	—
25	W	29·61	29·60	54	35	52	38	—	—
26	SW	29·80	29·60	55	41	57	40	—	
27	W	29·84	29·80	59	36	56	38	—	—
28	Var.	29·84	29·50	59	40	59	39	25	10
29	SE	29·75	29·50	52	35	51	37	—	
30	SW	29·87	29·75	60	31	62	36	—	36
31	SE	29·87	29·60	54	45	56	47	—	36
4th mo. April 1	SW	29·60	29·34	60	42	64	44	—	15
2	W	29·37	29·31	56	41	60	43	—	6
3	SW	29·58	29·37	57	32	60	32	—	
4	NW	29·70	29·58	58	34	58	34	—	
5	Var.	29·90	29·70	59	38			—	
6	W	30·00	29·90	61	38			—	
7	SE	30·20	30·00	64	40			—	
8	NE	30·20	30·16	63	32			—	
9	N	—	—	—	—			—	
10	SE	30·20	29·93	63	43	63	37	—	
11	NE	29·93	29·83	62	36	65	39	83	
		30·42	29·31	64	28			1·20	1·41

NOTES.—Third Mo. 14—19. Dull cloudy weather: the latter a misty day. 20. More clear and spring-like, after a misty morning. *Cirrus*, passing to *Cirrocumulus* and *Cirrostratus*. 21. Rainy: the morning opened with *Cirrostratus* lowering. 22—25. Variable spring-like sky: large *Cumulus* clouds, inosculating with *Cirrocumulus* and *Cirrostratus:* the *Nimbus* appeared occasionally the air nearly calm, with little evaporation, the mean temperature considered. 27. Overcast a. m., with *Cirrostratus:* a few drops of rain: p. m. large *Cirri:* sunshine and clouds. 28. Fair a. m., with *Cirrus* and other light clouds. 29. Overcast: *Cirrostratus*, with *Cumulus* and large *Cumulostratus* clouds. 30. The evaporation is now considerable: wind and rain by night. 31. Fine morning: wet forenoon: fair afternoon: thunder clouds appear.

Fourth Mo. 1. Cloudy a. m., with a few drops: a fine day: the *Cumulus* inosculates with the superior clouds: wind and rain by night. 2. Windy morning: squalls with rain, p. m.: a *Nimbus* on the NW horizon, with much wind at sunset. 3. Windy a. m.: *Cumulus* with *Cirrostratus:* p. m. *Cirrus* only, with a brisk evaporation. 4. Morning overcast with lighter modifications. 5—11. Fair weather: generally misty mornings, with much dew, and clear days: the roads are become already quite dusty by the brisk evaporation.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·42 in.
	Least	29·31 in.
	Mean of the period	29·842 in.
Thermometer:	Greatest height	64°
	Least	28°
	Mean of the period	44·14° [Lab$^{\text{y.}}$ 44·80°]
Evaporation		1·20 in.
Rain		1·41 in.

The frost may be said to have gone off in the first week of the present period, and the mean temperature having steadily advanced since, the latter week has been seasonably warm.

Leghorn, *April* 5.—On the morning of the 30th, we had three shocks of an earthquake here. No lives were lost, but several buildings were damaged.

(Pub. Ledger.)

TABLE XCIII.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 4th mo. April 12	N	29·83	29·76	71°	39°	74°	43°	—	
13	SE	29·76	29·62	74	42	76	42	—	—
14	S	29·62	29·48	70	43	76	48	—	
15	SE	29·44	29·42	69	46	69	51	—	—
16	S	29·42	29·23	65	47	70	49	—	30
17	S	29·54	29·23	62	40	64	44	—	—
18	SW	29·59	29·43	66	39	64	44	—	
19	SE	29·65	29·59	64	43	69	45	—	
20	SE	29·65	29·64	68	48	63	48	78	15
21	SW	29·73	29·64	62	39	58	45	—	13
22	NW	29·96	29·73	57	35	55	39	—	
23	SW	29·96	29·74	59	42	58	42	—	25
24	NW	29·80	29·74	55	41	50	40	—	3
25	NW	29·86	29·80	51	40	47	40	—	—
26	NW	30·10	29·86	55	33	51	34	37	13
27	NW	30·12	30·09	56	41	51	42	—	3
28	SW	30·09	30·04	52	43	38	43	—	12
29	SE	30·00	29·98	60	46	61	48	—	—
30	SW	30·10	30·00	64	42	69	46	—	
5th mo. May 1	Var.	30·12	30·10	68	48	71	50	—	
2	E	30·05	30·00	60	44	60	40	—	
3	E	30·00	29·83	63	41	64	42	—	
4	SE	29·83	29·70	57	36	51	39	70	
5	Var.	29·70	29·28	53	40	55	42	—	—
6	Var.	29·70	29·28	63	45	63	41	—	66
7	NE	29·95	29·70	67	45	62	49	—	—
8	W	30·14	29·95	69	43	64	43	—	
9	NE	30·27	30·14	57	35	55	35	—	
10	NE	30·42	30·27	55	33			30	
		30·42	29·23	74	32			2·15	1·80

NOTES.—Fourth Mo. 12. *Cirrus* clouds, passing to the intermediate modifications: the dust is become so dry and light that the air is filled with it: this is in part to be ascribed to electrical action. 13. Various clouds appeared a. m., including the *Nimbus:* and a few drops of rain fell: thunder clouds p. m.: a coloured twilight. 14. Clouds of various modifications. 15. A few drops a. m.: *a swallow appeared on the wing:* p. m. steady rain. 16. Much wind: showers. 17. Steady rain in the morning: wind S, hollow and murmuring: after this large *Cumulus* clouds (beneath *Cirrus,*) which in the evening rapidly evaporated or dispersed: an *Aurora Borealis* ensued. (See the note.)

18. Wet morning and evening: much *Cumulus* appeared to-day, intermixed with *Cirrostratus* in the region of its base, an appearance very unusual. 19. *Cirrostratus* a.m.: day fine: a *lurid* sunset, the disk showing enlarged, through spots and lines of *Cirrostratus*. 20. Clouds a. m., beneath an elevated haze, in which were discernible streaks from N to S: rain in the night. 21. The clouds inosculating a. m.: rain ensued in the evening. 22. Windy: *Cumulostratus*: a brisk evaporation. 23. Shower p.m.: rain in the night. 24. Windy: small rain. 25. Overcast: showery. 26. After a shower, various clouds through the day, and a rainbow: at sunset a beautiful *Cumulostratus* in the SE, reflecting the splendour of the twilight. 27. Cloudy: rain to the SW. 28, 29. Wet mornings. 30. A grey elevated sky.

Fifth Mo. 1. Windy. 2. Overcast a.m.: then fair, with *Cirrus*. 4. Cloudy morning. 5. The same: a windy and very wet day: the rain mixed at intervals with sleet and hail. 6. Showers, attended with the union of clouds in different strata. At sunset an appearance of extensive rain in the E, with groups of *Cumulus* and *Cirrostratus* before it. In the N and W these had, intermixed and adhering, a transparent brown-red haze, distinguishable from the substance of the cloud, and which gave a pink tinge to the twilight, elsewhere of the usual lemon colour. At the same time a *Stratus* arose in the meadows. 7. A misty morning: while the earth presents the aspect of spring, the sky of late is quite autumnal: showers again passed by in the E. 8. Cloudy morning: rain in the S and E: *Cumulus* clouds, uniting with *Cirrus* above. 9. Overcast sky.

RESULTS.

Winds Variable.

Barometer:	Greatest height	30·42 in.
	Least	29·23 in.
	Mean of the period	29·770 in.
Thermometer:	Greatest height	74°
	Least	33°
	Mean of the period	51·39° [Lab$^{y\cdot}$ 52·34°]
Evaporation		2·15 in.
Rain		1·80 in.

AURORA BOREALIS.

Fourth Mo. 18. The *Aurora Borealis*, of late years a very unfrequent visitant in these parts, appeared last night, with no great degree of splendour, but with the usual characteristic marks of this phenomenon. About 11 p. m. when my attention was first called to it, there was a body of white light, in part intercepted by clouds, extending at a moderate elevation from the N to the NW, with a short broad streamer rising from each extremity. After this it became an arch, composed of similar vertical masses of fibrous light, which moved along in succession, preserving their polarity and curved arrangement. One large streamer in particular, went rapidly through nearly the whole length of the arch from W to E, in which direction the rest chiefly moved. Some of these masses were rather brilliant, and one exhibited colours. After some cessation, and a repetition of this appearance, carried more towards E and W, the light settled in the N, and grew fainter: in which situation, at midnight, I ceased to observe it.

THUNDER STORMS, &c.

During a thunder storm at *Mantua*, on the 20th of March, a flash of lightning penetrated the theatre. Four hundred people were in the house, two of whom were killed, and ten were struck senseless, but afterwards recovered. The electric fluid melted the brass wire, also several gold and composition ear-rings and watch-keys, without hurting the wearers, and split the diamonds of two ladies of rank.

Friday, during a most tremendous storm of thunder and lightning, an electric bolt fell on the summit of a closely compacted rick of hay, the property of Mr. Jordan, of Cheltenham, which it perpendicularly pierced, penetrating several feet into the earth. The aperture it made at the summit was about three feet in circumference, but it lessened in its progress downwards to about six inches, and was much diminished at the base of the mow. A sulphureous effluvium arose from the rick, which was diffused for several yards round.

(PUB. LEDGER, *April* 14.)

Admitting the facts here related, (and there is nothing on the face of the accounts to lead us to dispute them,) they present two curious instances of the surprisingly varied operations of the electric fluid. To split a *diamond*, even with a knife and hammer, in the direction of the *laminæ* of which it consists, is an easy operation: and this crystallized and combustible substance being a non-conductor, we ought to expect such an effect occasionally, from a powerful stroke of electricity: but to perforate instantaneously a closely compacted *hay rick* is a more difficult task, and, considering the elastic nature of dried grass, would probably baffle the force of the heaviest ball from a cannon. The most probable solution of the fact seems to me to be this; that the substance of the hay was dispersed into the air by a *returning stroke* proceeding from the earth at the base of the hay rick to the clouds above. The true date of this occurrence is probably the first of the Fourth month. It will be seen that I noted thunder clouds on the preceding day.

SUPPOSED EARTHQUAKE.

We have heard, from most respectable authority, that a convulsion of the earth, exactly similar in effect and appearance to an earthquake, was sensibly perceived about ten minutes before eight o'clock, on Thursday night last, at Knill Court, Harpton, Norton, and old Radnor, Radnorshire; at Knill Court, the oscillation of the house was plainly perceptible, and felt by all the family, and that too in several apartments, and was accompanied with a peculiar rumbling noise. *At Harpton, a severe storm of thunder and lightning was experienced the same night, and at the same time.*—(PUB. LEDGER, *January* 27.)

I insert this report, under some uncertainty as to the date, (though it appears to have been some time in the first month of this year,) for the sake of the following remark. I do not apprehend that these local tremors of the ground in the time of thunder storms are to be classed with real earthquakes. I have stood at the distance of six or seven miles from the extremity of a most extensive and violent thunder storm, visible from Plaistow, and have sensibly felt the ground shake under my feet at the time of the nearer discharges, owing, as I conclude, to the circumstance of the electrical action taking place between the clouds and the thick *substratum* of indurated clay on which the country hereabouts reposes. Such strokes as penetrate but a little way below the surface I suppose to excite a lateral tremor proportionally less extensive.

The reader will find two cases forward, in my own observations, of a nature similar I conclude to the present, under the dates of Tenth month 7, and Twelfth month 14, 1816.

[In a letter which I received from the late Sir H. C. Englefield, dated August 26, 1806, making mention of the storm above referred to, he says: "I should extremely like to get a good history of the progress, duration, and extent of the late immense and violent thunder storm, which I am sure lasted at least fifteen hours, and extended over at least two hundred miles of country, from east to West."—L. H.]

TABLE XCIV.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 5th mo. May 11	NE	30·42	30·28	57°	34°	57°	35°	—	
12	NE	30·28	30·08	58	40	56	39	—	—
13	N	30·08	29·97	52	42	50	40	10	21
14	N	29·97	29·93	55	42	50	42	—	
15	NE	29·94	29·89	59	34	57	34	—	
16	SE	30·06	29·94	62	40	59	39	—	
17	NE	30·09	30·06	68	43	72	42	—	
18	E	30·06	30·04	68	40	71	40	40	
19	SE	30·04	29·85	70	41	69	38	—	
20	SE	29·85	29·70	62	42			—	
21	SE	29·70	29·48	60	36	61	43	—	
22	*SE*	29·78	29·75	52	39			—	
23	*NW*	29·67	29·59	54	41			—	—
24	*NW*	29·57	29·56	46	41	46	40	—	—
25	NW	29·87	29·57	58	31	52	33	—	—
26	NE	29·87	29·83	63	33	60	33	—	
27	NE	29·83	29·58	66	39	65	37	—	
28	NE	29·65	29·56	70	39			—	1·75
29	NW	29·96	29·65	70	42			—	
30	NW	30·01	29·96	63	48	63	49	—	
31	SW	30·01	29·94	67	46	67	47	1·00	
6th mo. June 1	SE	29·94	29·79	58	47	56	48	—	—
2	E	29·80	29·73	53	46	58	51	—	—
3	E	29·75	29·65	55	50			—	—
4	NE	29·90	29·75	55	45	52	48	—	77
5	NE	30·07	29·90	54	44	53	45	—	—
6	NE	30·07	30·00	55	43	53	44	—	—
7	NE	30·00	29·91	58	40	53	38	—	—
8	NE	29·97	29·89	67	41	64	40	—	
9	NE	30·03	29·97	70	36			55	
		30·42	29·48	70	31			2·05	2·73

[illegible] Mo. 13, 14. Cloudy: much wind. 15. Cloudy and
[illegible] *ostratus* prevails. 16, 17. Misty mornings. 18. A
[illegible] the NE, with *Cirrus*, *Cirocumulus*, and *Cirrostra-*
[illegible] clear morning. 24. A very wet day and night.
[illegible] grounds at night. 26. Ice on the pools of
[illegible] to the thickness of one tenth of an inch.
[illegible] hower last evening: and this morning

RESULTS.

Prevailing Winds Easterly.

Barometer:	Greatest height	30·42 in.
	Least	29·48 in.
	Mean of the period	29·910 in.
Thermometer:	Greatest height	70°
	Least	31°
	Mean of the period	50·50° [Lab^{y}· 50·40°]
Evaporation		2·05 in.
Rain		2·73 in.

The minimum of the barometer for this period is somewhat uncertain, from the loss of three days' observations about the time of its occurrence: the depression was followed by frost, as is frequently the case when much rain has fallen. The first of the present month was a contrast to the same of last year, when the thermometer rose to 85°; yet it is observable that the same low temperature occurred in that season also, four days afterwards. On the whole, this period has been more changeable than we should have expected with an easterly current prevailing; and full 6° colder than the corresponding one of 1813, in which westerly winds predominated. Birds of song are remarked to have been less heard than usual; a circumstance perhaps ascribable to their number having been reduced by the severity of the winter.

Cold in Russia.

An extract from a letter, dated Moscow, May 13th, (25th,) says:—"The weather here is worse than the oldest person alive recollects at this season. It snows generally every day, more or less, and sometimes the whole day: *last night the ice was half an inch thick.* Every body is alarmed for the consequences in regard to the agriculture of the country. The roads are next to impassable."

By accounts from Archangel, of the 17th of June, we learn, that the last winter had made greater inroads into the summer of that northern latitude than ever had been known in the memory of man. The ice of the Dwina had not broke up till the 24th of May, and even in the middle of June the White Sea was full of drift ice.—(Pub. Ledger.)

Ice Islands in the Atlantic.

The following is an extract of a letter from Halifax, N. S. dated the 31st of May, 1814:—" The convoy under the Spencer, bound to Quebec, on the 14th of May, in lat. 44° 18′ N, long. 50° 50′ W, [on the great bank of Newfoundland,] fell in with upwards of twenty large islands of ice, some of which were eighty feet above the surface of the water, and about two acres in extent. In the afternoon of the same day, the convoy met a field of ice, computed at *twenty* *miles extent, and about thirty feet above the water's level*, some parts being considerably higher; most happily, these were discovered in clear weather, and in the day time. For several days prior, and many subsequent to the 14th of May, the fogs were so intense that one ship could not discern another, within the range of half-cable, so that many of the convoy would have been wrecked, had the 14th proved as foggy. Happily, the wind was fair, and the atmosphere clear and frosty, and before night the convoy was considered out of danger.—(Public Ledger.)

Tornadoes.

[*From an American Paper.*]

I communicate the following, chiefly on account of one or two circumstances attending these phenomena of Nature, which I do not recollect to have noticed in any description I have seen elsewhere.

Two Tornadoes passed in this vicinity on Saturday last, (June 4th,) attended with their usual destructive effects on the timber, and razed the few buildings in their course to the foundations, destroying fences, corn, &c. In crossing the Ohio River, the water was taken out, and fish of every description were thrown upon the land.

The courses of the two were nearly parallel and simultaneous, about fifteen or twenty miles apart, proceeding from SW to NE. One passed through the prairies on Little Wabash, and was beyond our sight. The other passed in plain view, distant, on the first appearance, about three or four miles, and, from the levelness of the country, was visible for many leagues in its progress. Its shape was much like that of a cone, or sugar-loaf, with the small end downwards, or rather like a speaking trumpet, its upper part flaring considerably as it joined the cloud above. It was as black as pitch, and appeared to boil like that substance over a furnace. The cloud above was also very black. The extent at the bottom of the Tornadoes has been ascertained to have been between half a mile and a mile.

A singular circumstance, observed by myself, and others, who were within half a mile, was this—that the most vivid flashes of lightning were seen to pass between the heavens and earth in quick succession, just in front and rear, and sometimes through the body of the Tornado (or perhaps around it, in a line from it to our eyes,) and still no peals of thunder were heard from them. I do not think I ever saw so broad and vivid flashes before in my life. Indeed, I never before had so deliberate and fair a view of a phenomenon of this nature.

It has occurred to me, and I submit it to philosophers to decide, whether the extreme velocity of the air within the whirl, did not prevent the vibrations (or undulations) by which sound is conveyed, from being communicated to the tranquil air without? Were not the vibrations carried round and round within the Tornado and there expended? This opinion is confirmed to me, by the recollection of what I have heard persons say, who have been in Tornadoes, that there is a continual loud, thundering sound—which I think is produced by the electrical concussions within the whirl. They hear it continually—those out of it hear nothing, even from the fiercest flashes of lightning.

I will mention but one other circumstance—the hail stones which fell in these Tornadoes were as large as a man's two fists. They were tried to be put pint tin cup, and would not go in. Hail of this dimension may be by being long borne up and driven round through a moist medium by rling wind, before being let down to the ground: whereas, by descend- direct line, or nearly so, it can never become so large.

S. Griswold.

neetown, Illinois Territory, June 9, 1814.

another part of this work I may revert to this interesting de- tion, and make some observations on the nature of these terrible lwinds. In the mean time it must be apparent that, whatever heir primary cause, the effects are most extensive and compli- d. To the utmost mechanical force of air in motion, we see ed an extremely rapid condensation of its moisture, attended a proportionate developement of electricity. The great breadth mosphere through which the whole extends is another important deration: and it would be but a superficial view of the subject hould lead us to ascribe all this to the accidental meeting of opposite currents in the lower atmosphere.

TABLE XCV.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 6th mo. June 10	E	30·03	29·80	69°	42°	67°	40°	—	
11	E	29·80	29·70	69	48	69	50	—	—
12	E	29·94	29·70	74	48	70	48	—	—
13	E	30·01	29·94	67	55	67	55	—	—
14	W	30·01	29·82	85	53	82	62	50	1·00
15	S	29·87	29·75	78	52	79	52	—	—
16	NW	30·00	29·92	71	43	66	47	—	—
17	NW	30·04	29·92	68	52	62	52	—	—
18	NW	30·02	——			61	56	—	—
19	NW	——	29·74	66	42	66	44	26	38
20	NW	29·74	29·58	65	48	58	48	—	
21	NW	29·83	29·77	59	49	59	49	—	7
22	NW	30·07	29·83	60	49	54	48	—	—
23	NW	30·20	30·07	62	47	57	47	—	2
24	NE	30·27	30·24	60	41	56	43	—	—
25	NW	30·24	30·04	63	49	59	49	30	—
26	NW	30·01	29·99	62	48	57	49	—	—
27	NW	30·01	29·94	65	49	60	49	—	8
28	NW	29·94	29·84	74	47	67	47	—	
29	S	29·86	29·80	71	55	71	56	20	
30	NW	29·86	29·81	74	47	70	46	—	
7th mo. July 1	SW	29·90	29·82	70	46	64	44	—	
2	NW	29·94	29·90	74	42	69	45	—	
3	NW	29·95	29·93	79	50	76	54	33	
4	NW	29·95	29·94	75	58	68	58	—	—
5	NW	29·96	29·94	81	50	76	54	—	6
6	SW	29·96	29·88	79	49	76	55	—	
7	SW	29·82	29·78	73	63	76	60	—	—
8	SW	29·78	29·67	69	62	69	62	—	—
9	SW	29·67	29·67	72	63	72	63	50	13
		30·27	29·58	85	41			2·09	1·74

NOTES.—Sixth Mo. 10. A shower in the night. 11. Misty morning, with a smell of electricity in the air: *Cumulus* and *Cirrus* prevail. 12. Showers. 13. A *Stratus* in the meadows: thunder clouds afterwards appeared in the horizon: and at 11 p. m. lightning. 14. A thunder storm very early, with much wind, and heavy rain mixed with hail. 15. Wet morning: evening cloudy and windy. —23. Windy, and overcast, with *Cumulostratus* and *Cirrostratus*. A in the grate has been again acceptable. 24. A shower early: this ing the cloudy canopy passed off, with a definite boundary to the S, where, at the same time, it appeared to be raining. 25. Again overcast, with *Cumulostratus*, and windy: much honey dew on the lime trees. 26. A shower this evening. 27. The same. 28. Cloudy, calm: vane at N: *Cumulostratus*, very heavy in the middle of the day, but which cleared off in the evening. 29. Misty morning: clouds as yesterday. 30. Much sun to-day.

Seventh Mo. 1. *Cirrostratus* and *Cirrocumulus*, with some appearance of the *Stratus* at night. 2. a.m. Plumose *Cirri* of uncommon beauty, with *Cumuli* beneath them: the latter prevailed through the day. 3. Clear morning: the *Cumulostratus* again prevails. 4. Large ill-defined *Cirri* filled the sky this morning: various denser clouds succeeded. 5. Rain by half-past six; then cloudy and fair: at evening the sky cleared, with the wind W, and an orange twilight. 6. Loose driving *Cumuli*: brisk wind: clear twilight, with little colour. 7. Much wind: *Cirrus* passing to *Cirrostratus*, with *Cumulus* beneath, the whole formed to windward: in the evening a few drops of rain. 8. Wet, a.m.: fair, p.m.: windy night. 9. Windy, cloudy: dripping at intervals: the quickthorn hedges are in many parts quite stripped of their leaves by caterpillars.

RESULTS.

Wind chiefly from the North-West.

Barometer:	Greatest height	30·27 in.
	Least	29·58 in.
	Mean of the period	29·90 in.
Thermometer:	Greatest height	85°
	Least	41°
	Mean of the period	60·01° [Lab^{y}· 58·93°]
Evaporation		2·09 in.
Rain		1·74 in.

[The great excess in the temperature at Tottenham by day is here compensated, in part, by a higher temperature at the Laboratory *by night*. The latter is easily accounted for: the former I suspect to be owing in part to the circumstance of a too great exposure of the instrument to the sun at Tottenham: of which I may take further notice hereafter. Compare the Results under Tab. 100.]

TABLE XCVI.

		Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
	Wind.	Max.	Min.	Max.	Min.	Max.	Min.		
July 10	S	29·83	29·67	67°	44°	67°	49°	—	16
11	SW	30·03	29·83	76	51	73	54	—	17
12	NW	30·05	30·02	74	54	68	55	—	—
13	NW	30·02	29·77	70	48	62	51	—	
14	NW	29·77	29·68	69	48	63	53	—	—
15	W	29·63	29·62	74	52	65	53	36	—
16	NE	29·87	29·63	66	50	62	50	—	7
17	SE	29·87	29·85	73	48	70		—	14
18	SW	29·84	29·83	75	48		52	—	15
19	NW	29·83	29·62	74	57	70	61	—	
20	SW	29·70	29·56	74	56	75	59	—	2
21	NW	29·87	29·70	78	56	72	63	40	—
22	NW	30·07	29·87	69	50	69	53	—	
23	SW	30·15	30·09	82	52	86	56	34	
24	SW	30·09	29·83	78	55	80	63	—	
25	SE	——	——	84	61			—	
26	NW	30·05	29·90	80	60			—	
27	SE	30·05	29·98	83	70			—	
28	SE	29·98	29·89	91	66			1·08	—
29	SW	30·05	29·90	71	56			—	—
30	NW	30·10	30·05	72	65			37	
31	W	30·10	29·98	79	54			12	17
Aug. 1	NW	30·10	29·98	80	59			—	
2	NW	30·10	30·05	76	64			—	
3	SW	30·14	30·05	79	55			—	—
4	SW	30·14	29·98	77	62			73	
5	SW	29·98	29·86	76	58			—	—
6	W	30·05	29·98	69	57			—	—
7	SW	29·98	29·80	70	60			57	23
		30·15	29·56	91	44			3·97	1·11

th Mo. 10. Rain came on gradually this morning,
whole afternoon, after which appeared the *Cumulus*
the twilight was luminous, with faint horizontal
on: then *Cirrostratus*. 12. Clear morning:
of clouds inosculating, followed by a slight
ocumulus. 13. *Cumulostratus* through the
irrostratus: a strong breeze. 14. Clear
with a breeze. 15. Various modifica-
th overcast, with one or two very
he night. 16. *Cumulostratus* a. m.:

slight showers p. m.: the wind variable: a *Stratus* at night. 17. Misty morning, after which various clouds, with the wind E: inosculation followed, and a heavy shower in the evening: an electrical smell was perceived at different intervals to-day. 18. Windy: showers through the day. 19. *Cumulostratus,* after some sunshine: at evening the lighter modifications prevailed, including *Cirrocumulus,* in a turbid sky. 20. Wind S a. m., hollow, and threatening rain: some showers followed, after which the clouds separated, showing several modifications, distinct, and well formed. 21. Fine morning with *Cumulus:* groups of thunder clouds formed p. m., chiefly to the E: but at sunset the electrical character gave place to *Cirrostratus* and wind. 22. After a clear morning the *Cumulostratus,* which has so long predominated, with its usual attendant, a strong breeze of wind. 23. A nearly serene day. 24. Clear day: a breeze from SE. 27. Some lightning at night. 28. (At Tottenham, the thermometer rose to 92·5°: the observations for the latter half of this period were made at the Laboratory, Stratford.) Frequent vivid lightning in the evening. 29. Some lightning this morning, with rain: a strong breeze from the SW all day.

Eighth Mo. 3. A few slight showers in the evening. 7. Day showery, with brisk wind.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height	30·15 in.
	Least	29·56 in.
	Mean of the period	29·918 in.
Thermometer:	Greatest height	91°
	Least	44°
	Mean of the period	65·5°
Evaporation		3·97 in.
Rain		1·11 in.

HAIL STORM.

The storm (says a Stamford paper) which alarmed this town and neighbourhood on Thursday night, the 28th ult. was felt with much greater severity in some parts of Leicestershire. Its course seems to have been from SW to NE. At Reasby, between Leicester and Melton Mowbray, it began before ten o'clock, with such a wind and hail, followed by such thunder and lightning, as horror-struck every person in the parish. The hail stones were bigger than hens' eggs; many window-frames [sashes] have been beaten in at Reasby, Syston, Thrussington, and Hoby, and fields of corn totally destroyed. Of course the demolition of glass in windows facing the direction of the storm has been general in those places.—(PUB. LEDGER.)

TABLE XCVII.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 8th mo. Aug. 8	W	29·62	29·61	73°	50°			—	5
9	W	29·82	29·62	69	52			—	—
10	W	29·97	29·82	72	48			—	13
11	W	30·05	29·97	73	56			75	1
12	SW	30·05	29·97	77	56			—	
13	SW	29·89	29·77	74	51			27	—
14	NW	29·76	29·74	70	49			—	
15	SW	29·83	29·80	70	52			—	
16	S	29·75	29·75	67	46			—	40
17	W	29·90	29·84	71	57			58	
18	W	29·98	29·92	76	53			—	—
19	NW	29·99	29·88	70	43			—	—
20	NW	29·93	29·92	70	49			34	
21	SW	29·87	29·77	70	53			—	2
22	SW	29·79	29·75	76	55			—	4
23	SW	29·64	29·54	79	52			—	—
24	N	29·57	29·40	63	55			39	1·21
25	SW	29·60	29·40	71	51			—	28
26	NW	29·78	29·70	67	43			—	—
27	NW	29·87	29·85	66	43			—	
28	N	30·00	29·91	65	37			55	
29	NW	30·09	30·07	68	46			—	
30	W	30·17	30·10	73	57			—	
31	NW	30·24	30·17	71	58			30	
9th mo. Sept. 1	E	30·24	30·20	68	58			—	
2	NE	30·20	30·10	72	49			—	
3	NE	30·18	30·10	65	45			32	
4	NE	30·15	30·10	65	41			—	
5	*N*	30·23	30·21	65	52			—	
6	*NW*	30·18	30·07	65	54			42	17
		30·24	29·40	79	41			3·92	2·31

NOTES.—Eighth Mo. 8. Rain last night: a stiff breeze, a. m.: rain, p. m.: a large *Nimbus* in the SW, and a transient bow in the evening. 9. The breeze continues, with *Cumulus* and *Cumulostratus:* after a drizzling shower or two, a calm evening, with *Cirrocumulus.* 10. The night was overcast: *Cumulus* a. m: and *Cumulostratus,* with repeated showers p. m., passing off very heavy to the E at sunset. 11. Morning cloudy: evening close, with a *Stratus* forming at sunset. 12. Cobwebs on the grass with the dew: cloudy a. m.: clear at noon: evening calm: a fine plumose *Cirrus* in the N. 13. A few drops of rain ng. 15. Drizzling rain: the wind veered to S in the night:

heavy showers from nine to twelve, when it cleared up, the wind turning to the westward. 17. Fine morning, with a light wind, WNW: *Cirrocumulus* prevails, with other clouds. 18. *Cirrus* and *Cirrocumulus:* light showers: at sunset the lower edges of the clouds exhibited a deep red. 19. *Cumulostratus,* with some light showers. 20. Morning calm: much dew: the first feeling of autumnal cold: at sunset a group of dense *Cirri* in the NNW. casting shadows into the atmosphere: a *Stratus* in the marshes. 21. Towards evening some light showers from low driving clouds. 22. *Cirrostratus* in the N horizon, a. m.; and at sunset a singular one in the W. 23. Some rain in the night: *Cumulostratus,* with showers: close and warm. 24. *Cumuli,* hung like curtains round the horizon: little air stirring: *Cirri* formed above, moving briskly from the NW, with the vane at N: soon after 11 a. m. it began raining, continuing to rain incessantly through the day, and at intervals through the night also. 25. A magnificent display of *Cumulostratus* this morning, followed by repeated showers: p. m. a thunder shower, the wind changing to W. 26. Some rain during the night: wind brisk and cool: *Cumulus* and *Cumulostratus:* the sky at sunset ruddy orange, reflecting a bronze hue from the eastern clouds. 27. The night was serene: a *Stratus* this morning, with a plentiful dew: *Cirrocumulus* appeared alternately with *Cumulostratus:* a few large drops of rain at 2 p. m.: evening calm: clear sunset. 28. Morning almost cloudless: a fresh breeze from N: much dew and cobwebs on the grass: *Cirrocumulus* in the evening, beautifully illuminated by the setting sun. 29. Misty morning: dew and cobwebs: fine day. 30. Grey morning, calm, cloudiness in the north.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height . . .	30·24 in.
	Least	29·40 in.
	Mean of the period . .	29·88 in.
Thermometer:	Greatest height . . .	79°
	Least	41°
	Mean of the period . .	60·20°
Evaporation	. . . . . .	3·92 in.
Rain .	. . . .	2·31 in.

I am indebted for most of the observations contained in this period to the kindness of my brother, William Howard, by whom they were made, in my absence, at Tottenham. It appears there was a tremendous hail storm at *Coventry,* on the 24th of Eighth month.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9th mo. Sep. 7	SW	29·94	29·67	62°	50°			—	37
8	NW	30·05	29·94	65	50			—	
9	N	30·06	30·05	64	49			—	—
10	N	30·07	30·06	62	47			—	—
11	N	30·15	30·06	65	38			—	
12	NE	30·15	30·13	62	33			—	
13	E	30·14	30·10	63	34			37	
14	E	30·14	30·12	65	34			—	
15	E	30·12	30·05	64	36	66°	37°	—	
16	E	30·00	29·98	66	43	67	46	—	
17	E	30·01	29·95	68	37	72	40	—	
18	SE	30·05	30·01	71	39	74	36	—	
19	SE	30·02	29·97	72	44	74	42	—	
20	SW	29·97	29·76	75	52	76	44	—	—
21	SW	29·76	29·70	68	44	67	43	56	16
22	SW	29·79	29·75	65	40	62	40	—	1
23	S	29·75	29·59	65	48	65	45	—	—
24	S	29·57	29·52	70	60	71	59	—	—
25	SW	29·77	29·74	70	44	68	45	—	35
26	SE	29·74	29·65	66	55	65	55	—	—
27	W	29·76	29·75	66	48	66	47	—	31
28	N	29·97	29·76	64	44	60	40	25	—
29	N	29·97	29·94	61	54	62	51	—	—
30	NE	30·00	29·94	64	46	59	45	—	
10th mo. Oct. 1	NE	30·06	30·00	54	40	55	39	—	
2	NE	30·16	30·06	54	37	55	33	—	
3	NE	30·20	30·16	57	37	57	32	—	
4	NE	30·20	30·03	60	39	59	33	—	
5	NE	30·03	29·79	59	31	60	31	43	
		30·20	29·52	75	31			1·61	1·20

NOTES.—Ninth Mo. 7. Showery: wind veered to NW: in the evening *Nimbi*, with large *Cumuli:* rain in the night. 8. Overcast, windy: calm evening. 9. Cloudy: a few drops. 10. Windy, with *Cumulus* and *Cirrostratus:* a slight shower at 8 p. m. 11. Windy: fair day: *Cumulus* with *Cirrostratus*, denseIy grouped at sunset. 12. Much dew orange sky at sunset. From 11 to 15 inclusive, hoar frost in the mornings, and the *Stratus* by night. 16. Brisk wind: calm at night. 17. A very wet mist this morning: the day was fine, with large *Cirri*. 18. Fine: a group of *Cirri* obscured the setting sun. 19. Misty morning: clear day. 20. *Cirrus* in streaks from N

, mixed with haze lowering and passing to *Cirrocumulus* and *'ostratus,* the motion being from E to W: a shower of rain fol- ed these appearances. 21. Brisk wind: changeable sky. 22. Dew morning: the sky overcast with *Cirrostratus* and haze: p. m. dy, with a shower. 23. Misty a. m. with *Cirrostratus:* showers, wind followed. 24. Blustering at S a. m.: temperature at the imum at nine. Cloudy, damp, and close. In the evening ty much lightning to the S and W: at nine the storm came ily over us, giving a few discharges of blue lightning, with nder and heavy rain. 25. A small steady rain, succeeded by n sunshine. 26. Dew a. m.: afterwards cloudy and windy, with wers. 27. Cloudy a. m.: a *Stratus* at night. 28. Overcast: a ht shower, succeeded by *Stratus.* 29. Windy: overcast: a few ps. 30. Windy.

'enth Mo. 1—5 inclusive. Clear weather, with brisk drying ds.

RESULTS.

nds Variable: the SW uniformly brought rain; the opposite current, fair weather.

Barometer:	Greatest height	30·20 in.
	Least	29·52 in.
	Mean of the period	29·945 in.
ermometer:	Greatest height	75°
	Least	31°
	Mean of the period	53·79°
Evaporation		1·61 in.
Rain		1·20 in.

TABLE XCIX.

1814.	Wind.	Pressure.		Temp.		T.No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 10th mo. Oct. 6	SW	29·73	29·63	59°	39°	56°	37°	—	10
7	NW	29·83	29·73	57	32	54	32	—	—
8	N	30·01	29·83	55	31	52	27	—	
9	NW	30·16	30·01	52	24	48	29	—	
10	N	30·16	29·91	56	34	48	34	—	
11	S	29·91	29·68	54	41	53	46	—	
12	SW	29·68	29·57	59	44	60	50	—	—
13	SE	29·57	29·40	64	50	69	53	32	1
14	SW	29·49	29·31	67	48	65	50	—	13
15	SW	29·48	29·40	59	42	61	46	—	10
16	SW	29·68	29·48	56	38	55	44	—	—
17	S	29·68	29·28	58	43	59	50	—	—
18	SE	29·40	29·13	58	36	61	42	—	14
19	SW	29·25	29·03	54	42	61	42	—	80
20	W	29·68	29·25	55	30	57	38	—	—
21	W	29·73	29·68	55	33	54	39	30	
22	SW	29·55	29·50	59	47	59	48	—	4
23	NW	29·74	29·54	57	34	52	37	—	
24	S	29·74	29·09	53	39	61	40	—	95
25	NW	29·50	29·09	52	32	50	32	—	6
26	NE	29·70	29·50	50	38	49	37	—	—
27	W	29·81	29·70	53	32	50	34	—	
28	NE	29·82	29·75	52	32	55	34	17	
29	SE	29·84	29·66	52	37	53	40	—	13
30	Var.	29·90	29·87	53	39	53	41	—	
31	NE	29·93	29·87	55	47			—	
11th mo. Nov. 1	NE	29·96	29·93	50	43			—	4
2	NE	29·96	29·93	44	38			—	
3	NE	29·93	29·83	47	33			10	
		30·16	29·03	67	24			·89	2·50

NOTES—Tenth Mo. 6. Misty morning: the trees dripping: the wind veered from NW to SW, with *Cirrostratus,* then *Cumulostratus,* and finally rain. 7. Clear a. m.: much dew p. m.: a sudden shower, with hail. 8. Hoar frost: fine day with *Cumulostratus.* 9. Hoar frost: *Cumulus:* fine day: the wind a strong breeze: clear orange sky in the twilight. 10. Hoar frost: clear: the temperature of last night was destructive to various tender garden plants, and brought down the leaves from the mulberry trees. 11. Wind S a. m.: the sky turbid, and streaked from N to S. 12. Overcast with *Cirrostratus:* it appears to have rained in the night. 13. a. m. Large *nimbiform*

Cirri, passing to *Cirrocumuli:* the wind E, very gentle, the vane remaining at SW: a smart breeze from this quarter ensued. 14. The lighter modifications of cloud, with much wind, a. m: driving showers p. m. 15. Fine a. m.: then wind and some showers. 16. Clear: windy. 17. The sky veiled with *Cirrostratus.* 18. Much wind: small rain at intervals: then showers. 19. Windy: wet a. m: clear at noon: p. m. rain again, by inosculation of the clouds: rainbow: wet, stormy evening. 20. Rather windy a. m., with *Cirrostratus* and *Cumulus:* large *Cirri* and *Cirrocumuli* above the wind: a few drops of rain. 21. Hoar frost: calm. 22. Overcast: wind followed by rain in the night. 23. *Nimbi* to N and S p. m.: a rainbow in the former. 24. A fine day: *Cumulus,* with *Cumulostratus,* and extensive beds of the lighter clouds above, which appeared to descend, passing to the westward: the evening was overcast, and there followed a tempestuous night: the wind was mostly S or SE, changing in the morning to SW. The barometer had been lower than the minimum here noted. 25. Showers a. m.: cloudy p. m.: clear night. 26. Hoar frost: somewhat misty: a little rain followed. 27. A fine day, after a cloudy morning: large distinct *Cumulostrati,* in an air nearly calm. 28. Misty morning: minimum temperature about seven: *the drops of dew frozen:* a fine day. 29. *Cirrostratus,* overcast sky, a. m.: showery, with wind, p. m. 30. The lighter modifications appeared till noon, in elevated lines stretching NE and SW, the wind being NW.

Eleventh Mo. 1. Cloudy: a steady breeze from NE, and small rain. 2. The breeze continues. 3. The same: overcast morning: fine day.

RESULTS.

Wind for the most part Westerly: but during the latter part of the period Easterly.

Barometer:	Greatest height	30·16 in.
	Least	29·03 in.
	Mean of the period	29·662 in.
Thermometer:	Greatest height	67°
	Least	24°
	Mean of the period	46·43°
Evaporation		0·89 in.
Rain		2·50 in.

KINGSTON, JAMAICA, *October* 27.—On the 17th instant came on dark, gloomy weather, with heavy rain. On the 18th it blew *from the N and NW,* one of the most tremendous gales of wind, attended with torrents of rain, (which lasted three days,) that has been experienced here these twenty-five years.—(PUB. LEDGER.)

TABLE C.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 11th mo. Nov. 4	NE	29·83	29·74	44°	33°	43°	35°	—	—
5	NE	29·80	29·71	42	32	45	32	—	45
6	N	29·84	29·77	47	30	46	33	—	
7	SW	29·77	29·32	49	31	48	36	—	1
8	SW	29·37	29·23	46	32	45	34	—	9
9	NW	29·89	29·37	42	29	42	31	—	
10	NW	30·28	29·89	40	26	40	31	—	
11	SW	30·28	29·78	47	31	50	35	18	
12	SW	29·85	29·78	52	38	50	43	—	8
13	NW	29·86	29·80	49	39	48	42	—	—
14	SW	29·85	29·75	53	43	53	47	—	—
15	SW	29·78	29·28	54	45	52	48	—	—
16	W	30·00	29·28	49	32	47	38	—	18
17	SW	30·00	29·82	53	35	53	46	—	
18	SW	29·82	29·37	52	42	53	43	—	17
19	NW	29·48	29·37	47	28	45	29	22	
20	NE	29·57	29·48	43	34	43	39	—	20
21	N	29·69	29·57	38	20	37	26	—	
22	NW	29·67	29·65	36	19	37	23	—	
23	NW	29·81	29·67	35	26	38	26	—	
24	Var.	29·81	29·48	46	35	50	30	—	16
25	S	29·48	29·18	50	42	53	47	—	32
26	W	29·59	29·18	50	32	48	36	5	7
27	Var.	29·68	29·30	44	35	45	35	—	68
28	SW	29·64	29·44	45	36	46	36	—	27
29	W	29·44	29·15	48	34	49	39	—	
30	N	29·45	29·12	44	32	44	35	—	
12th mo. Dec. 1	NW	29·73	29·45	43	30	43	33	—	—
2	W	29·86	29·73	38	30	38	32	—	3
3	E	29·86	29·50	38	28	41	32	6	32
		30·28	29·12	54	19			0·51	3·03

NOTES.—Eleventh Mo. 4. Misty morning: cloudy: shower at night. 5. Overcast a. m.: wet afternoon and evening. 6. The drops of dew were frozen, but so clear as not to appear like hoar frost: a fine day, with large *Cirri,* and afterwards *Cirrostratus* and *Cumulus:* a streaked orange sky at sunset. 7. Hoar frost, followed by cloudy sky: some rain after dark. 8. Clear morning: hoar frost: about 4 p. m. the sky became very dark, and there was a storm of rain, attended by a single loud explosion of electricity. It is remarkable that on the same day of the month last year, at the same hour, and in the same direction (SW,) we had a similar storm. 9. *Cirrus,* with the compound modifications: several shooting stars this evening: windy afterwards. 10. A steady breeze from the NW: *Cirrostratus* appeared over the Thames at sunrise: ice a quarter of an inch thick, and permanent: a brilliant twilight; first, lemon colour surmounted by purple; then, by the blending of the two, a rich deep orange. 11. Hoar frost. I observe this often continues an hour longer on some tufts of *saxifraga cæspitosa* than any where else in my garden: the plant grows on close spongy masses of fibre, which are bad conductors of heat. 12. It was stormy last night; and is said to have thundered and lightened about 3 a. m. Wet this morning; but the day fine: twilight orange, delicately varied with dusky horizontal striæ. 13. Cloudy and raining at 8 a. m., but fine afterwards, with a smart breeze. 14. Cloudy. 15. *Cirrostratus* a. m.: then *Cirrus nimbiformis,* depending and curling beneath: a turbid sky ensued, and wind in the night. 16. A wet stormy morning. 17. Much wind by night. 18. Small rain a. m.: wet and stormy at night. 20. Hoar frost: a little rain at intervals. 21. Overcast. 22. 23. Hoar frost: misty. 24. The same: near sunset a hollow wind from SW, and rain in the night. 25. Wet day. 26. Some rain a. m. 27. Clear morning, with evaporation: but before noon cloudiness was coming on from the W. and it rained steadily from sunset till late at night. 28. Wet again in the night. 30. Large elevated *Cirri,* with *Cirrostratus.*

Twelfth Mo. 1. Brisk wind at N: in the night a slight sprinkling of snow. 3. Wet morning.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height	30·28 in.
	Least	29·12 in.
	Mean of the period	29·635 in.
Thermometer:	Greatest height	54°
	Least	19°
	Mean of the period	39·05° [Lab$^{y.}$ 40·73°]
Evaporation		0·51 in.
Rain.		3·03 in.

On the 6th of November, about six in the morning, two violent shocks of an earthquake were felt at *Lyons*, in the direction from west to east, preceded by a loud clap of thunder, unaccompanied by lightning. [This was probably the spurious earthquake.—*See T.* 93, *note.*] Both before and after the report the rain descended in torrents; the weather had been, the night preceding, very tempestuous.—(Pub. Ledger.)

There was a considerable fall of snow at Edinburgh on the 9th, a circumstance rather unusual so early in the season. At the beginning of last week a great deal of snow also fell on the NW of Devon, some of the hills were covered, and on Dartmoor, several inches deep.—(Pub. Ledger, *November* 17.)

TABLE CI.

1814.	Wind.	Pressure.		Temp.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 12th mo. Dec. 4	*S*	29·50	29·34	44°	36°	45°	33°	—	
5	*W*	29·94	29·50	41	33	41	33	—	
6	*NE*	30·04	29·91	38	28	39	33	—	
7	*S*	30·04	29·60	45	33	47	38	—	—
8	S	29·60	29·25	52	45	54	47	—	44
9	SW	29·70	29·25	52	25	52	30	—	6
10	*E*	29·37	29·35	51	29	52	32	11	53
11	W	29·63	29·37	54	48	55	50	—	33
12	SW	29·65	29·50	56	53	57	54	—	17
13	*W*	29·72	29·50	56	41	58	44	—	3
14	SW	29·56	29·54	53	42	54	46	—	7
15	SW	29·68	29·40	55	43	57	47	—	3
16	SW	29·92	29·40	55	37	58	43	—	10
17	SW	29·78	29·68	55	44			—	5
18	SW	29·82	29·67	56	51	57	52	33	2
19	SW	30·05	29·67	55	30	55	36	—	11
20	N	30·08	29·98	38	28	41	30	—	
21	NE	29·98	29·73	39	31	39	32	—	
22	E	29·73	29·46	37	32			—	
23	E	29·69	29·67	38	32			—	
24	E	29·67	29·62	33	29	34	31	—	—
25	NE	29·61	29·58	33	30	34	31	20	—
26	NE	29·62	29·45	35	32	37	33	—	16
27	SE	29·45	28·94	41	35			—	1·14
28	NE	29·70	28·94	40	33	41	34	—	—
29	SE	29·78	29·70	43	34	45	35	—	2
30	S	29·90	29·71	49	33	51	37	—	9
31	E	30·18	29·90	44	31	45	35	—	—
1813. 1st mo. Jan. 1	N	30·43	30·18	42	30			4	
		30·43	28·94	56	25			0·68	3·35

NOTES.—Twelfth Mo. 4—6. Slight hoar frosts: ice on the ponds: windy at intervals. 7. Occasional small rain. 8. The maximum temperature of the last twenty-four hours occurred this morning, with a hollow SW wind: an unsteady rain followed, of many hours' continuance, with much wind at S. 9. Windy: the barometer appears to have stood through the night at the minimum noted. 10. Hoar frost *Cirrostratus:* overcast a. m.: after one, the day wet and stormy: much wind in the night. 11. Cloudy, rain before nine, and at intervals through the day. *Though it was very cloudy, the bees came out in great numbers, as observed about the same time last year.* 12. *Temperature this* morning 54°, with low driving clouds, and a gale at SW. 13. Early this morning the wind was violent: it moderated about 3 p.m.: and the clouds, after a squall, assumed the *Cumulostratus:* much water out in the marshes. 14. Red sunrise: *Cirri* over the sky, with their extremities drawn out westward: p.m. it blew hard again from SW, followed by rain at night. 15. Much wind and cloud a.m. *The millers, who are said to have remarked that for two years past our atmosphere has been calmer than usual, will now probably complain of an excess of wind.* The *Cumulostratus* appeared after 3 p.m., and the evening and night were calm. 16. Early this morning the wind rose again, and blew with great violence, with rain at intervals, till about 3 p.m., when the same change ensued as yesterday. 17. Overcast: windy: some rain p.m.: a gale through the night. 18. The tempestuous weather continues. 19. A shower about 8 a.m., and again in the evening, after which light clouds were observed to pass the moon's disk with less and less velocity. 20. Hoar frost: a fine and nearly calm day: swarms of gnats in the air, and *gossamer* floating: the dew froze on the grass by half-past 4 p.m.: there was a corona round the moon, and a *Stratus* at night. 21. Hoar frost. 22 Dry air: steady breeze: *Cirrus,* passing to *Cirrostratus:* a lunar halo of large diameter. 23, 24. Cloudy: steady breeze. 25. Some snow in the night, followed by a little more in the day. 26. Snow more plentiful a.m.: a thaw. 27. Rain: sleet and snow: rain again. 28. The maximum of temperature early this morning: much rain. 29. Overcast sky. 30. Misty. 31. Hoar frost: large *Cirrus* clouds: a few drops of rain: p.m. *Nimbus.*

1815. First Mo. 1. Hoar frost: a rose-coloured sky, with *Cirrostratus* at sunset.

RESULTS.

Winds in the fore part Westerly and violent: in the latter, Easterly and moderate: in both, attended with rain: there was but one clear day in the period.

Barometer:	Greatest height	30·43 in.
	Least	28·94 in.
	Mean of the period	29·665 in.
Thermometer:	Greatest height	56°
	Least	25°
	Mean of the period	40·13°
Evaporation		0·68 in.
Rain		3·35 in.

STORMS OF WIND.

NEWCASTLE, *December* 23.—The late hurricane, which commenced in this neighbourhood on Friday morning, (December 16,) has been generally felt throughout the whole country. In the south the storm commenced on the 11th instant, and the shipping on the SW coast has suffered most dreadfully from its effects. The gale from that time *has moved gradually northwards*, and has left sufficient evidence of its violence in all the places within its vortex.

Whitehaven.—The night of December 15 was very tempestuous. Numbers of chimneys in this town were blown down; several houses suffered greatly in their roofs, and some were nearly unroofed.

At Lancaster the tide began to flow about two hours earlier than set down in the tide table; and the coach from Ulverston, crossing the Lancaster Sands, was obliged to make for the shore above Silverdale. The tide continued to flow about half an hour later, and was between six and seven feet higher than mentioned in the table.

The Hull paper says, the gale, or rather hurricane, of December 10, was the longest and most severe that has been experienced on this coast for many years. The Humber for twelve hours was covered with white spray; the waves washed over all the vessels at anchor, and many of them were forced from their anchorage.

Greenock, *December* 16, half-past 3 p. m.—Since our last the wind continued blowing strong from the S and SW. Last night it greatly increased, and until now has continued to blow with unremitting violence. In the morning there was a considerable deal of thunder and lightning, accompanied by excessive falls of rain.

Limerick, *December* 17.—Within the memory of the oldest inhabitant of this city there has not been so tremendous a hurricane as was experienced here yesterday morning; it commenced with the wind at WSW, about three o'clock in the morning, being then about low water, raising the tide (the spring tides falling off) to a height never before known in this port.

A Portsmouth Paper of December 18 says—" A very strong gale of wind, from the W and SW, has prevailed here nearly the whole of the present week; in consequence of which, we are sorry to state, some lives have been lost, and much anxiety occasioned. The gale attained its utmost fury on Wednesday (December 14): during the greater part of that day it was found impracticable to proceed to Spithead from the port.

Weymouth, *December* 23.—This week we have experienced one of the most tremendous gales of wind at SE ever known at this port.

Falmouth, *December* 28.—Put back the Duke of Kent packet, which sailed from this port, with mails for Lisbon, on the 5th instant, having experienced very heavy gales of wind, in one of which, on the 21st, they were under the necessity of cutting away their mainmast (then in lat. 44½ long. 11½.)

Liverpool, *February* 8, 1815.—We this day learn, that the Star, Disbrow, from New Brunswick for this port, met with a severe gale on the 21st of December, in lat. 40, long 20, in which her dead lights were stove in, bulwarks carried away, a passenger and four seamen washed overboard; the captain and one man died on the wreck; and the mate and five of the crew were taken from the foretop by a Portuguese schooner, where they had been seven days.

The late tempestuous weather has been succeeded, in the neighbourhood of Bristol, by a heavy fall of snow, which covers the country in that part to the depth of three inches, and continued on Thursday, (December 22,) without any appearance of a change. Fortunately there was not any wind, and the snow had not drifted.

No place in the empire has suffered so much from the late storm as Adare, the beautiful seat of the Hon. W. Quin, in the county of Limerick. It has lost about seven hundred trees, of which above five hundred were timber of very great size, and ornamental to the grounds, torn up by the roots.—(PAPERS.)

Extract of a Letter dated Cincinnati, November 9, 1814, *from Dr. N. Crookshank to Dr. Peter Wilson, Columbia College.*

On the 4th of June last, about meridian, a dark cloud appeared in or near the SW point of the horizon, having the usual appearances of electricity, as was known, by the hemispherical or convex appearance of various parts on the superior sides of the different shelves composing it; while the lower part appeared parallel to the earth, [*Cumulus.*] Some light clouds were seen to move with great rapidity from the NE, [*Cirrostratus,*] and appeared to meet the former; when both seemed to rise perpendicularly several degrees, so as to attain an extraordinary height, [*Cumulostratus.*] I then predicted hail, which presently fell, of uncommon size. Several stones were picked up after the shower [which ended in rain] too large to put into a cup four inches in diameter. Others were picked up in the time of the fall, thirteen, fourteen, and even fifteen inches in circumference: yet, strange to tell, no material damage was done, though the width of the shower was five miles, and twenty or thirty in length; the tract of the largest hail, in centre of the former, about a mile. *The large pieces appeared to be aggregated of numerous others, which were likewise composed of smaller ones.* Some, however, of more than ordinary size, appeared single, as if they had been snowballs immersed in water, and re-frozen. The largest of those I saw resembled the section of a large hen's egg. About five the same afternoon, a hot or very warm current of air passed over, of such temperature and composition, as to threaten those who breathed it with instant death. Their only remedy was by stooping down near the earth. It actually did prove fatal to the leaves, and parts of leaves of many vegetables, by which means its traces were discovered above sixty miles, along and near the Ohio river.

This current of hot air happened entirely out of the tract of the hail, to the southward and eastward of it.

(From a Paper on Meteorology, read before the Literary and Philosophical Society of New York, December 8, 1814. By JOHN GRISCOM.)

TABLE CII.

1815.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1 mo. Jan. 2	NE	30·45	30·42	30·43	30·39	35°	32°	—	
3	NE	30·42	30·16	30·42	30·14	33	30	—	
4	N	30·16	30·06	30·14	30·07	33	30	—	
5	NE	30·06	30·05	30·07	30·03	31	30	—	
6	N	30·05	29·95			34	25	—	
7	NW	29·95	29·48			35	24	—	
8	W	29·99	29·48			34	25	—	
9	Var.	30·02	29·76			42	26	—	
10	NW	29·76	29·52			44	35	13	
11	NW	29·88	29·52			40	32	—	
12	NW	30·15	29·88			40	24	—	
13	SW	30·15	29·75			40	28	—	28
14	N	30·17	29·75			43	32	—	
15	NE	30·30	30·17	30·33	30·20	36	27	—	
16	Var.	30·25	30·20	30·30	30·20	37	30	—	
17	NW	30·25	30·13	30·30	30·14	41	32	19	
18	N	30·13	29·96	30·14	29·96	36	27	—	
19	E	29·96	29·68	29·96	29·61	34	22	—	
20	NE	29·80	29·77	29·82	29·61	28	26	—	
21	NE	29·80	29·75	29·80	29·75	35	29	—	
22	N	29·85	29·80	29·84	29·80	35	28	—	
23	Var.	29·85	29·73	29·85	29·70	37	17	—	
24	Var.	29·61	29·56	29·70	29·57	29	20	—	
25	N	29·56	29·41	29·60	29·40	30	22	—	
26	SE	29·41	28·96	29·40	28·90	39	23	—	
27	E	28·96	28·88	28·90	28·76	39	30	—	
28	SW	29·03	28·95	29·05	28·87	42	36	—	57
29	Var.	29·24	29·03	29·24	29·05	43	34	—	
30	SE	29·29	29·22	29·27	29·20	41	35	—	
31	S	29·36	29·34	29·35	29·27	45	38	17	22
		30·45	28·88	30·43	28·76	45	17	49	1·07

NOTES.—First Mo. 2. Slight hoar frost: misty: cloudy. 3. Breeze fresh, and drier air: slightly clouded. 4. The same. 5. The same: a little snow. 6. The same. 7. A bank of *Cirrostratus* in the SE a. m: during the forenoon these clouds passed over in flocks, and becoming denser at night, there fell a little rain or sleet. 8. A fine day, with *Cirrus:* bright starlight night. 9. Clear morning, but a *Cirrostratus* over the marshes, and *Cirrus* above in lines from NE to SW: at midday a little snow: windy evening. 10. *Cirrostratus* and *Cumulostratus:* maximum of temperature, for the day, this morning. 11. Brisk wind: *Nimbi* to the S, succeeded by *Cumulus* and *Cirrus:*

a little snow after dark. 13. Barometer falling a. m.: hoar frost: red lowering *Cirrus* and *Cirrostratus* clouds in lines from N to S: these indications were followed by rain after 2 p. m. 15. Cloudy: smart breeze, SE in the night. 16. The sky overcast with *Cirrostratus* a. m.: this modification continued through the day, with a dry air. 17. Cloudy: windy night. 18—23. Snow fell at intervals during these six days, often in regular and beautiful crystallizations. 24. Much rime on the trees and shrubs a. m.: misty from *Cirrostratus:* temperature 18° about nine: wind easterly in the night. 25. Somewhat misty: overcast: snow. 26. Cloudy a. m.: snow p. m. in crystals of all sizes, varying from the simple union of six prisms in a minute star to broad feathery flakes of the most regular compound structure: it was nearly calm during this time; so that the crystals escaped the derangement consequent on being driven about in their descent. 27. Snow and sleet p. m.: a thaw, interrupted by a little frost in the evening: maximum of temperature in the night. 28. Wind and rain in the night. 30. Misty a. m.: the trees dripping: rain.

RESULTS.

Winds Northerly till near the close of the period.

Barometer:	Greatest height	30·45 in.	[By Clock 30·43 in.]
	Least	28·88 in.	[.. 28·76 in.]
	Mean of the period	29·77 in.	[..]
Thermometer:	Greatest height	45°	
	Least	17°	
	Mean of the period	32·66°	[Lab$^{y.}$ 32·43°]
Evaporation		0·49 in.	
Snow and Rain		1·07 in.	

THUNDER STORM IN THE NETHERLANDS.

The 11th of January, 1815, was a remarkable day for the whole country from the North Sea to the provinces of the Rhine, on account of a tremendous storm of thunder and lightning, during which the steeples of many churches, in places far distant from one another, were set on fire nearly at the same hour. The tempest took its course over Arnheim, Utrecht, Bois-le-Duc, and several other places. (Details of about twelve of these buildings damaged or burnt, follow.) It is remarkable, that only the highest steeples were every where struck: and this tempest confirmed in a striking manner the accuracy of previous observations, that storms of thunder and lightning, though of rare occurrence in winter, are generally most mischievous in that season.—(GERMAN PAPER.)

TABLE CIII.

1815.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2 mo. Feb. 1		29·45	29·36	29·50	29·31	48°	39°	—	
2	E	29·62	29·45	29·63	29·50	46	36	—	
3	W	29·62	29·39	29·62	29·35	49	39	—	13
4	SW	29·80	29·39	29·90	29·40	54	36	—	
5	SE	29·92	29·74	30·00	29·75	50	38	—	
6	SW	29·74	29·55	29·75	29·53	47	42	—	4
7	Var.	29·70	29·55	29·78	29·55	52	36	—	—
8	*S*	29·62	29·49	29·70	29·50	50	38	15	15
9	SE	29·66	29·63	29·70	29·60	47	37	—	
10		29·63	29·43	29·60	29·40	46	40	—	4
11	Var.	29·40	29·28	29·42	29·29	51	39	—	11
12	SW	29·51	29·37	29·50	29·36	50	48	—	21
13	SW	29·60	29·40	29·60	29·45	52	32	—	
14	E	29·65	29·40	29·70	29·45	50	37	—	—
15	Var.	29·65	29·56	29·71	29·55	51	42	—	—
16	SW	29·56	29·50	29·55	29·47	54	35	18	16
17	NW	30·26	29·50	30·34	29·52	52	33	—	2
18	SW	30·26	30·16	30·34	30·22	51	34	—	
19	SW	30·16	29·71	30·25	29·60	48	45	—	—
20	W	29·82	29·55	29·83	29·56	54	42	—	26
21	NW	30·15	29·82	30·20	29·80	56	48	—	
22		30·20	30·15	30·27	30·20	57	39	—	
23		30·15	30·00	30·27	30·04	51	40	27	
24	W	30·00	29·97	30·05	30·00	52	47	—	
25	SW	29·97	29·92	30·01	29·95	53	46	—	
26	NW	30·40	29·92	30·45	30·00	54	29	—	5
27	*SE*	30·47	30·44	30·52	30·45	48	25	—	
28	SE	30·44	30·15	30·50	30·32	45	31	—	
3d mo. March 1	SE	30·19	30·15	30·25	30·19	52	33	20	1
		30·47	29·28	30·52	29·29	57	25	80	1·18

NOTES.—Second Mo. 1, 2. Misty dull weather. 3. Cloudy: wind and rain in the night. 4. Temperature 49° at the time of observation: fine: *Cumulus* beneath hazy *Cirrus*. 5. *Cirrostratus* and haze at sunrise, and much dew, which did not evaporate: a very fine day; temperature 56° in the sun: *Cumulostratus* p. m. 6. The same followed by rain. 7. Overcast a. m.: dripping: Wind NW p. m.: groups of *Cumulostratus, Cumulus,* and *Cirrostratus,* occupying the whole south from one to two, coloured light indigo, with red haze above, and attracting the smoke. 8. The wind rose at 8 p. m. with the usual hollow sound: a beating rain from that quarter ensued. 9. Misty, from a diffused *Cirrostratus*, and cloudy above. *Water from a well, which might be* 10° *warmer than the air, emitted a visible steam.* 10. Cloudy: dripping at intervals. 11. The same: dark *Nimbi* passed in the S, the wind being W p.m. 12. Misty a.m.: cloudy: wind and showers. 13. A wet windy morning, succeeded by a very fine day: *Cumulus*, with *Cirrus*. 14. A very moist *Cirrostratus* a.m.: then fine, with various clouds: a little misty rain at night. 15. Much dew: the rain kept off till evening. 16. Windy: wet: a lunar corona. 17. Morning clear, with dew: then *Cumulus*, which becoming dense, inosculated with the clouds above and with the smoke: a little rain p.m.: lunar corona. 18. Slight hoar frost: haze, passing to *Cirrus* and *Cirrostratus*. 19. Heavy *Cumulostrati* through the day: much wind. 20. Windy: wet: lunar halo at night. 21, 22. *Cumulostratus:* windy. 23. Fine. 24. Ramified *Cirrostratus*, indicating wind, which followed. 25. Blustering wind, with *Cumulostratus*, and strong evaporation: a little rain notwithstanding. 26. Showers, which laid the dust: a sudden clearing in the W at sunset. 27. Very white frost: a fine day out of the smoke. 28. Hoar frost, and a frozen mist: a serene day.

Third Mo. 1. Hoar frost: *Cirrus* in a fine elevated veil, passing to *Cirrostratus*, and exhibiting between ten and eleven a solar halo: a very fine day, the pollution of the smoke excepted.

RESULTS.

Winds Variable, but for the most part Southerly.

Barometer:	Greatest height .	30·47 in.	[By Clock 30·52 in.]
	Least . . .	29·28 in.	[.. 29·29 in.]
	Mean of the period	29·785 in.	[.. 29·794 in.]
Thermometer:	Greatest height .	57°	
	Least . . .	25°	
	Mean of the period	44·43° [Lab^{y}· 45·58°]	
Evaporation	. . .	0·80 in.	
Rain	. . . .	1·18 in.	

TABLE CIV.

1815.	Wind.	Pressure.		By Clock.		T. No. 2.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3 mo. Mar. 2	Var.	30·22	30·17	30·27	30·20	48°	35°	—	8
3	NW	30·20	30·17	30·26	30·20	49	37	—	
4	SW	30·17	30·11	30·26	30·16	54	41	—	
5	NW	30·17	30·06	30·23	30·10	55	40	—	
6	*W*	30·17	29·90	30·24	29·90			—	
7	*SW*	29·90	29·35	29·90	29·32	52	38	—	—
8	*W*	29·50	29·35	29·55	29·32	52	32	—	45
9	NW	29·46	29·16	29·40	29·00	49	34	30	15
10	W	29·32	29·16	29·38	29·20	48	29	—	6
11	SW	29·48	29·32	29·57	29·38	47	30	—	—
12	S	29·32	28·86	29·40	28·80	49	35	—	39
13	NW	29·52	28·86	29·50	28·74	52	39	—	10
14	SW	29·96	29·52	30·00	29·50	49	32	—	5
15	Var.	29·96	29·68	30·00	29·64	55	37	—	19
16	SW	29·83	29·68	30·00	29·75	62	43	—	
17	NW	29·97	29·83	30·07	30·00	62	42	35	
18	NW	29·99	29·88	30·07	29·90	55	46	—	—
19	NW	29·91	29·88	29·97	29·90	57	45	—	13
20	W	29·91	29·75	29·97	29·78	60	41	—	
21	SW	29·75	29·54	29·78	29·55	59	45	—	6
22	SW	29·54	29·31	29·60	29·35	61	45	—	6
23	W	29·42	29·14	29·45	29·15	59	40	—	15
24	SW	29·42	29·25	29·46	29·23	57	40	35	8
25	SW	29·70	29·25	29·77	29·23	56	31	—	
26	SW	29·70	29·42	29·77	29·39	53	46	—	—
27	SW	29·46	29·34	29·52	29·33	60	49	—	12
28	*SW*	29·95	29·46	30·04	29·50	60	44	—	26
29	*S*	29·93	29·77	30·02	29·85	62	43	—	
30	*SW*	29·93	29·88	30·00	29·93	59	43	—	
31	Var.	29·88	29·65	29·93	29·70	73	46	43	
		30·22	28·86	30·27	28·74	73	29	1·43	2·33

NOTES.—Third Mo. 2. Small rain at intervals. 3. Misty morning: fine day. 4, 5. *Cumulostratus.* 6. Fine day: *Cirri* appeared, much elevated and coloured at sunset. 7. Fine morning: cloudy and windy with some rain p. m.: night very stormy. 8. Windy wet a. m.: showers by inosculation in the evening. 9. Hoar frost a. m. turbid sky: rain: fair p. m. 10. Snow early, after which various modifications of cloud, ending in showers of rain and snow p. m. 11. Hoar frost: *Cirrostratus* and *Cumulostratus: Nimbi,* with large hail p. m. 12. Dull misty day: at night very stormy, with rain. 13. Cloudy a. m., with a gale at SW, and rain at intervals: several dense *Nimbi,* thunder, hail, and hard rain p. m.: much wind with distant lightning, at night. 14. *Cirrostratus* and haze: then *Cirri,* passing to dense *Nimbi:* gusts of wind, hail, and rain. 15. The barometer has risen, with an almost uniform motion, about an inch and a quarter in thirty-six hours; yet the air has not become clear: it should be observed, that there had been much previous depression. A wet forenoon, with a breeze at E: *Cirrostratus* p. m.: at night much wind. 16. High wind at SW., with *Cumulostratus* a. m.: fair and pleasant. 17. Much dew a. m.: *Cirrostratus* with *Cirrocumulus:* the light clouds after sunset beautifully tinted with lake and purple. 18. After a few drops the *Cumulostratus* prevailed, followed by rain in the night. 19. Some rain a. m.: then *Cumulostratus:* and at evening *Cirrostratus,* with a lunar corona. 20. Dew a. m.: a light veil of *Cirrostratus:* at evening, the clouds passed to the N. 21. *Cumulus,* beneath *Nimbiform Cirrus,* both elevated: about 5 p. m. during the approach of a squall, the wind was very noisy among the branches, (now covered with opening buds,) producing an almost vocal modulation of sound: as soon as the trees became wet, this was exchanged for the usual hoarse noise, resembling that of the sea shore. The night was boisterous. 22. Much wind: showers: two strata of cloud: borne very high, as for some days past. 23. Heavy squalls, with some hail in the showers: a singular combination of clouds in the E, p. m.: it was a *Nimbus,* with *Cumuli* adhering and entering at the flanks, while a very lofty columnar *Cumulus* shot up through the midst of the crown, and this again was capped with a small *Cirrostratus.* 24. Various clouds: squally, p. m. 25. The same: a brisk evaporation: at sunset *Cumulus* at a considerable height inosculated with *Cirrus* above: after which two distinct *Nimbi* in the S, which went away eastward. 26. Driving showers: at evening a lunar corona, followed by much wind and rain at intervals. 27. Stormy: showers. 28. Fair. 29. Large *Cirri,* which passed chiefly to the *Cirrocumulus* p. m. 30. Misty a. m.: overcast p. m.: little wind. 31. A very fine day: large *Cirri* formed alone at a considerable elevation, and passed in the evening to the NW: much dew followed.

RESULTS.

Winds Westerly.

Barometer:	Greatest height .	30·22 in.	[By Clock 30·27 in.]
	Least . . .	22·86 in.	[.. 28·74 in.]
	Mean of the period	29·672 in.	[.. 29·706 in.]
Thermometer:	Greatest height .	73°	
	Least . . .	29°	
	Mean of the period	47·44°	[Lab$^{y.}$ 48·20°]
Evaporation . . .		1·43 in.	
Rain		2·33 in.	

TABLE CV.

Wind.	Pressure. Max.	Pressure. Min.	By Clock. Max.	By Clock. Min.	Temp. Max.	Temp. Min.	Evap	Rain, &c.
SE	29·72	29·55	29·80	29·60	70°	45°	—	3
W	29·82	29·81	29·90	29·80	63	42	—	
[illegible]	29·91	29·81	29·98	29·85	57	34	—	3
W	30·18	29·91	30·20	29·92	60	35	—	
W	30·20	30·12	30·30	30·20	59	41	—	
NW	30·12	30·06	30·22	30·13	66	43	—	
[illegible]	30·06	29·91	30·13	29·95	59	45	—	
[illegible]	29·91	29·81	29·95	29·86	61	45	68	
NE	29·84	29·81	29·90	29·87	64	43	—	—
NE	29·90	29·84	30·00	29·90	54	50	—	50
[illegible]	29·90	29·89	30·00	29·94	63	47	—	—
SW	29·89	29·75	29·94	29·80	68	40	—	4
[illegible]	29·59	29·56	29·80	29·60	69	36	—	23
NW	30·00	29·59	30·05	29·65	46	34	—	—
N	30·13	30·00	30·17	30·05	50	28	30	
NE	30·13	30·11	30·18	30·15	53	30	—	
NE	30·25	30·11	30·32	30·18	54	31	—	
N	30·25	30·18	30·32	30·22	54	30	—	—
[illegible]	30·18	29·85	30·22	29·85	59	38	—	
SW	29·85	29·17	29·85	29·30	59	36	—	—
[illegible]	29·17	28·74	29·30	28·67	49	40	—	72
N	29·06	28·74	29·07	28·74	50	40	38	20
[illegible]	29·24	29·06	29·27	29·07	52	35	—	16
[illegible]	29·66	29·24	29·68	29·25	44	36	—	2
	29·91	29·66	30·00	29·64	53	41	—	8
[illegible]	30·06	30·04	30·15	30.00	58	33	—	—
[illegible]	30·04	29·92	30·07	29·95	61	43	—	1
[illegible]	29·92	29·64	29·95	29·66	64	45	—	
[illegible]	29·64	29·49	29·66	29·51	54	39	—	—
[illegible]	29·65	29·47	29·70	29·50	56	40	45	7
	30·25	28·74	30·32	28·67	70	28	1·81	2·09

A summer-like day, with a breeze of
noon, and continued after sunset, passing
followed. 2. Overcast a. m., apparently
during the middle of the day this gave
Overcast, calm with dew on the grass
which *Cumulus* and *Cirrus*. 4. Much
irrostratus: a few large drops about
The same: low *Cumuli* prevailed
th *Cirrostrati:* then a shallow bed
Cirrostratus: the evening twi-
ith red. 8. *Cumulus* beneath

Cirrocumulus: a strong breeze: a mixture of *Cirrostratus* and *Cirrus* gave the clouds an appearance of active electricity; but the whole ended in *Cirrostratus.* 9. A confused mixture of the modifications, as yesterday, with the addition of haze: some drops by 10 a. m., and a shower p. m. 10. Heavy showers a. m.: cloudy p. m. 11. Wind SW a. m.: the clouds, mingled with the smoke of the city, came back from the E at sunset. 12. a. m. The clouds gathered pêle mêle, the *Cumulus* being capped with *Cirrostratus:* p. m. the *Nimbus* appeared, and after some distant thunder to SW we had a shower. 13. *Cirrus, Cirrocumulus* a. m.: much dew, the large drops of which sparkled in the sun with the prismatic colours: various modifications of cloud followed: about 1 p. m. it thundered N: then nearer with lightning, S: the wind shifting to that point, we had a heavy shower from W, with hail: wind and rain at night. 14. Cloudy, windy, a. m.: *Cumulostratus:* a little snow: *swallows skimming the meadows.* 15. *Cumulus,* succeeded by *Cumulostratus:* the wind moderate. 16. The same: there were traces of hoar frost this morning. 17. Hoar frost: *Cumulostratus:* at night *Cirrostratus,* and a lunar corona. 18. a. m. A few drops during the union of some clouds, which became *Cumulostratus.* 19. Loose *Cumulus* a. m.: at night *Cirrus,* and afterwards a very large *white* lunar halo. 20. Overcast, dripping: a hail shower p. m.: at night a lunar halo, very small, the prismatic ring touching a corona within. 21. Much cloud and wind: wet forenoon and night: the greatest depression of the barometer that has occurred in the present year. 22, 23. Much cloud, windy: rain at intervals. 24. Windy: cloudy: rain a. m., with a little hail: in the evening *Cumuli* dispersed rapidly, with *Nimbi* and *Cirrostrati* in the horizon. 25. Various clouds, ending in rain, of which, however, very little till night. 26, 27. Windy, variable: some dripping. 28. A little rain early: then *Cumulostratus.* 29. *Cumulostratus:* strong breeze: dripping: the *Cirrocumulus* appeared, transiently, as for several days past: a *Stratus* at night. 30. *Cirrocumulus,* which passed to *Cirrostratus:* p. m. (upon the wind becoming SE) rain.

RESULTS.

Winds Variable, but for the most part Northerly.

Barometer:	Greatest height .	30·25 in.	[By Clock 30·32 in.]
	Least . . .	28·74 in.	[.. 28·67 in.]
	Mean of the period	29·783 in.	[.. 29·832 in.]
Thermometer:	Greatest height .	70°	
	Least . . .	28°	
	Mean of the period	48·56°	[Lab$^{y\cdot}$ 47·90°]
Evaporation . . .		1·81 in.	
Rain		2·09 in.	

TABLE CVI.

1815.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 5 mo. May 1	E	29·67	29·65	29·74	29·70	67°	50°	—	—
2	SE	29·72	29·70	29·80	29·70	71	47	—	13
3	NE	29·70	29·68	29·75	29·67	73	47	—	
4	NE	29·67	29·65	29·73	29·71	67	44	—	3
5	*W*	29·69	29·65	29·78	29·71	67	48	—	4
6	S	29·70	29·66	29·78	29·72	68	49	—	2
7	S	29·70	29·67	29·73	29·70	69	49	—	5
8	SW	29·81	29·67	29·90	29·69	70	47	61	
9	W	29·80	29·79	30·00	29·90	69	49	—	5
10	SW	29·85	29·79	29·93	29·85	70	51	—	
11	SW	29·79	29·51	29·85	29·56	73	51	—	5
12	SW	29·66	29·64	29·74	29·57	67	47	—	4
13	SW	29·65	29·55	29·83	29·70	67	43	—	19
14	SW	29·81	29·77	29·88	29·82	66	45	—	6
15	S	29·90	29·72	30·05	29·77	69	41	—	13
16	Var.	30·23	29·90	30·33	30·05	70	40	52	
17	W	30·23	30·19	30·32	30·28	71	56	—	
18	NW	30·19	30·10	30·30	30·18	76	50	—	
19	W	30·10	29·78	30·18	29·80	77	48	—	
20	NW	29·78	29·51	29·80	29·55	76	43	—	
21	NW	29·77	29·51	29·85	29·55	65	42	—	2
22	W	29·88	29·85	29·97	29·85	61	34	45	
23	*SW*	29·85	29·67	29·96	29·76	61	44	—	20
24	*SW*	29·97	29·72	30·07	29·84	66	48	—	—
25	NW	30·12	29·97	30·23	30·07	71	51	—	
26	*NW*	30·12	30·10	30·23	30·20	80	47	—	
27	*NE*	30·10	29·89	30·20	29·91	73	52	—	
28	NE	29·89	29·80	29·91	29·80	78	58	—	—
29	Var.	29·85	29·80	29·86	29·80	69	50	—	9
30	Var.	29·90	29·85	29·91	29·84	68	49	50	
		30·23	29·51	30·33	29·55	80	34	2·08	1·10

NOTES.—Fifth Mo. 1. Dew this morning: a very fine day: lightning at night far in the S. 2. Dew, with rudiments of thunder clouds, which in increasing became very beautiful: a storm was within hearing the whole midday, to S and SW: p. m. a heavy shower mixed with large hail, followed by lightning, in the SE. 3. A strong breeze: thunder clouds, which dispersed in the evening. 4. *Cumulostratus:* some showers, followed by *Cirrostratus.* 5. Much dew: clear morning, succeeded by *Cumulus,* &c.: thunder to the S: a shower in the evening. 6. Dew in large drops: somewhat misty and overcast: a shower in the night. 7. Windy: dripping at eve. 9. *Cumulostratus:*

a few drops by inosculation at sunset: rain in the night. 10. Windy: driving clouds. 11. Dew: windy, a. m. at SE, with large *Cirri*, and below them *Cirrocumulus*, variable and beautiful: p. m. the *Cumulus* was added, with *Cirrostratus* in the region of its base: at sunset a storm in the SW, which about nine passed us to NE: the lightning in violet coloured sheets, with delicate white branched streaks on them: the thunder moderate, rolling out to a great length. 12. Much wind: slight showers a. m.: clouds and haze at sunset. 13. Wind and rain: at half-past 6 p. m., during a heavy shower which passed to the E, there was a perfect double rainbow, on which I repeated an observation already recorded in this register, under Fifth Month, 4, 1813. The contrast, between the space which separated the two bows and the remainder of the cloud, was on the present occasion very striking. 14. Fair and warm: a shower p. m., with a bow: *Cirrostratus.* 15. Hollow wind at S, with an overcast sky: wet evening. 16. *Cumulostratus;* wind p. m. NW, a milky luminous twilight: much dew. 17. Somewhat misty morning: p. m. *Cirrostrati* advancing from the N overspread the sky, without any other cloud. 18. Windy at N, and overcast with *Cumulostratus,* a. m.: clear and calm p. m.: red sunset. 19. A very fine day: the twilight luminous, and somewhat ruby-coloured, followed by *Cirrostratus.* 20. Windy: various clouds: the sky purplish round the moon at night. 21. Brisk NW wind a. m: showers. 23. Showers. 28. A brisk wind at SE: *Cirrus,* followed by *Cirrostratus: Nimbi* in the S at sunset: rain by ten at night. 29. Some thunder: rainy afternoon.

RESULTS.

Winds Westerly, with a small portion of Easterly at the beginning and end of the period.

Barometer:	Greatest height .	30·23 in.	[By Clock 30·33 in.]
	Least . . .	29·51 in.	[.. 29·55 in.]
	Mean of the period	29·812 in.	[.. 29·872 in.]
Thermometer:	Greatest height .	80°	
	Least . . .	34°	
	Mean of the period	58·58°	[Lab^{y}· 58·97°]
Evaporation		2·08 in.	
Rain		1·10 in.	

The thunder storm of the 2d, it appears, was about Croydon. At Addington, three miles from that place, "the water poured in torrents, and rushing into the valley formed a stream fifty feet wide. It took its way through the village, forced open the doors, and carried away the furniture from the habitations."—(PUB. LEDGER.)

TABLE CVII.

1815.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 5 mo. May 31	SW	29·90	29·75	29·84	29·70	72°	54°	—	—
6th mo. June 1	NE	30·03	29·80	30·09	29·80	70	38	—	
2	NW	30·03	29·93	30·09	29·95	72	55	—	22
3	W	29·93	29·83	29·95	29·87	69	56	—	2
4	W	29·83	29·55	29·87	29·60	73	54	—	
5	SW	29·55	29·41	29·60	29·45	71	47	—	—
6	SW	29·46	29·33	29·50	29·38	68	45	45	28
7	*NW*	29·62	29·33	29·70	29·50	72	42	—	
8	SE	29·77	29·62	29·84	29·70	72	46	—	—
9	SE	29·78	29·77	29·87	29·83	73	42	—	
10	NW	29·78	29·74	29·84	29·80	72	45	—	
11	SW	29·73	29·67	29·80	29·74	76	41	—	1
12	S	29·67	29·43	29·74	29·50	68	43	—	—
13	Var.	29·43	29·21	29·50	29·23	67	50	50	80
14	W	29·42	29·21	29·55	29·23	68	45	—	9
15	SW	29·79	29·42	29·87	29·55	70	45	—	—
16	E	29·79	29·50	29·87	29·54	80	55	—	23
17	SW	29·53	29·46	29·59	29·53	76	54	—	8
18	SW	29·63	29·55	29·70	29·58	74	51	—	
19	S	29·63	29·59	29·70	29·66	73	55	—	
20	N	29·68	29·57	29·75	29·64	74	46	—	
21	SW	29·81	29·68	29·90	29·75	73	50	48	
22	NE	29·86	29·81	29·90	29·84	74	44	—	4
23	NE	29·96	29·86	30·05	29·92	71	52	—	
24	N	29·96	29·86	30·05	29·80	74	55	—	8
25	NE	30·01	29·86	30·10	29·80	67	40	—	
26	*N*			30·10	30·07	67	47	—	
27	W	30·08	29·98	30·20	30·10	75	44	—	
28	W	30·17	30·08	30·27	30·10	79	49	30	
		30·17	29·21	30·27	29·23	80	38	1·73	1·85

NOTES.—Sixth Mo. 4. Cloudy: windy. 5, 6. Windy, with *Cumulostratus* and *Cirrocumulus:* showers. 7. Heavy clouds: and at noon a sound like distant thunder in the NE: towards evening the dense clouds dispersed, leaving *Cirri* at a great elevation, and a most beautiful *Cirrostratus,* grained, like wood, in the NW: hygrometer (De Luc's 30 to 35° 8. A grey sky, with *Cirocumulus,* &c. which formed heavy *Cumulostratus,* threatening thunder: but a few drops of ng, the whole dispersed, save some *Cirrostratus.* 9. *Cirro-* with *Cirrostratus:* a fine day: much dew at night. 10. A y: in the course of which the hygrometer went to 24°

11. a. m. Clouds and wind, followed by a shower p. m. 12. Overcast: hygrometer, at 8 a. m. 62°; at nine 55°: clouds from SE, the wind being NW: a little rain: the evening obscure, with *Cirrus* and *Cirrostratus* hanging very low. 13. Cloudy morning: showers: after which large *Cumuli*, capped, and followed by *Nimbi:* from one to 2 p. m. heavy rain, the wind going from SE by S to NE, then back to SW: some thunder followed, and a fine afternoon, but the *Cirrostratus* remained at night. 14. Wet morning: hygrometer at eight 72°; at nine 50°: after some showers, a fine afternoon. 15. Hygrometer at nine 55°: showers and wind: fair p. m. 16. Hygrometer at nine 39°: a fine day: *Cirrus:* a corona round the moon. 17. Hygrometer 71°: wet morning, and rain in the night: a slight shower p. m. 18. Hygrometer 52°: rain in the night: rather cloudy. 19. Hygrometer 43°: a pretty fine day. 20. Hygrometer 40°: rather a dull day. 21. Hygrometer 55°: pleasant: not very sunny: about 1 p. m. a clap of thunder, and a few large drops of rain. 22. Hygrometer 49°: a dull cloudy morning: a little rain p. m. 23. Hygrometer 44°: morning cloudy: pretty high wind. 24. Hygrometer 38° morning very dull: about twelve, cleared up, and the sun shone very hot: p. m. cloudy again. 25. Rain in the night: p. m. sunshine at intervals. 26—28. Very fine days: hygrometer 46° to 52°.

RESULTS.

Winds Variable.

Barometer:	Greatest height .	30·17 in.	[By Clock 30·27 in.]
	Least . . .	29·21 in.	[. . 29·23 in.]
	Mean of the period	29·708 in.	[. . 29·743 in.]
Thermometer:	Greatest height .	80°	
	Least . . .	38°	
	Mean of the period	60·00° [Lab$^{y.}$ 62·05°]	
Evaporation .	. . .	1·73 in.	
Rain .	. . . .	1·85 in.	

The observations from the 16th inclusive to the end were made by my son, during my absence from home.

Figures on the Sun's Disk.

There is now on the Sun's disk the most extraordinary configuration of maculæ, or spots, that ever was seen: they present, when viewed through an astronomical, or inverting telescope, the exact resemblance of the figures 28. If viewed through an erect telescope, they will of course appear inverted, but equally distinct—the 2 in particular is perfectly formed.—(Papers, *June* 13.)

TABLE CVIII.

1815.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 6 mo. June 29	SW	30·17	30·11	30·26	30·20	77°	46°		
30	NW	30·11	30·02	30·20	30·10	77	53		
7 mo. July 1	NE	30·03	30·02	30·14	30·10	75	49		
2	NE	30·03	29·92	30·10	30·00	71	49		
3	W	29·92	29·85	30·02	29·97	67	46		
4	N	29·96	29·85	30·05	29·98	72	42		—
5	Var.	29·98	29·92	30·10	29·96	70	52		
6	Var.	29·88	29·86	29·96	29·92	70	50	—	10
7	NE	30·00	29·88	30·10	29·96	64	42	—	—
8	NW	30·00	29·96	30·10	30·01	69	54	—	1
9	NW	30·04	30·00	30·17	30·03	70	52	—	
10	NW	30·05	30·04	30·17	30·14	75	51	—	
11	E	30·05	29·99	30·14	30·05	75	48	—	
12	SW	29·99	29·93	30·05	29·99	79	49	62	
13	SW	29·97	29·87	30·08	29·98	77	57	—	—
14	SW	29·97	29·92	30·09	30·00	79	61	—	—
15	SW	29·88	29·85	30·00	29·92	77	57	—	—
16	W	29·95	29·84	30·07	29·98	75	55	—	—
17	W	29·84	29·70	29·90	29·77	80	54	—	—
18	SW	29·70	29·62	29·80	29·67	75	49	—	—
19	NW	29·65	29·47	29·73	29·53	68	52	—	69
20	NW	29·82	29·65	29·91	29·73	65	49	70	31
21	NW	30·00	29·97	29·94	29·90	68	47	—	—
22	NE	30·00	29·98	29·90	29·87	68	52	—	
23	NW	30·04	29·98	30·00	29·88	68	53	—	6
24	NW	30·13	30·04	30·10	30·00	69	56	—	—
25	NW	30·13	30·13	30·10	30·07	71	52	—	21
26	NW	30·18	30·13	30·20	30·10				—
27	NW	30·19	30·18	30·20	30·17	66	42	—	—
28	NW	30·18	30·17	30·17	30·13	74	47	68	
		30·19	29·47	30·26	29·53	80	42	2·00	1·38

NOTES.—Sixth Mo. 29. A very fine day: the western sky in the twilight bright orange near the horizon, with a purple glow above. 30. Cloudy morning: after which sunshine at intervals.

Seventh Mo. 1. Heavy *Cumulostrati* p. m. 2. Windy, cloudy, a. m: *Cirrus*, passing to *Cirrocumulus*, &c. p. m.: a luminous twilight, the clouds much coloured. 3. Windy a. m., with *Cumulostratus*. 4. Cloudy: a few drops p. m. 5. *Cumulostratus*, formed by *Cirrocumulus*. 6. The wind passed this morning by SE to SW, but settled at NW, with va-
louds: rain fell in the night. 7. Wet this morning early, and
t NE: p. m. fair, with *Cumulostratus*. 8. *Cumulus* a. m., with

Cirrostratus: cloudy evening: some rain by night. 9. *Cumulostratus:* orange twilight. 11. A very fine day: pink-coloured *Cirri* at sunset. 12. Sultry: a. m. *Cumulostratus* by inosculation. About noon, an appearance of distant rain in the NE, which continued till evening: the whole of our own clouds gradually disappeared, with a steady SW breeze. At sunset it was clear, and somewhat orange-coloured to NW, but obscure, with *Cirrostratus* to NE. 13. Large ill-defined *Cirri,* with nascent *Cumuli,* and afterwards *Cirrocumulus,* at a great height, passed to the NE with a fresh breeze: a little rain fell in the evening. Hygrometer about 40° these three mornings past. 14. Various clouds, threatening rain at intervals, which followed p. m. in quantity scarcely sufficient to lay the dust: windy 15. *Cumulus* beneath *Cirrostratus* a. m.: windy: some light showers, and a trace of the rainbow at sunset. 16. A slight shower a. m. 17. Various clouds a. m.: a few drops p. m.: at evening a tendency to the rapid formation of *Cirrostratus,* the denser clouds at the same time exhibiting a beautiful gradation of colours: twilight orange. 18. In the morning an extensive sheet of flimsy *Cirrocumulus,* which soon moved away. Hygrometer at 9 a. m. 68°. About 10 p. m. the same kind of cloud: a low murky sky. 19. A steady rain a. m. Hygrometer 70° at 9 p. m. 20. Overcast, with *Cumulostratus:* windy. 21—26. Mostly cloudy: occasional showers. 27, 28. Fine.

RESULTS.

Prevailing Winds Westerly, and these for the most part NW.

Barometer:	Greatest height .	30·19 in.	[By Clock 30.26 in.]
	Least . . .	29·47 in.	[.. 29·53 in.]
	Mean of the period	29·961 in.	[.. 30·014 in.]
Thermometer:	Greatest height ..	80°	
	Least . . .	42°	
	Mean of the period	61·36° [Lab$^{\text{y.}}$ 62·77°]	
Evaporation (in 23 days, from the 6th inclusive) . .		2·00 in.	
Rain		1·38 in.	

Hail Storms in France.

The department of Dordogne has been most dreadfully ravaged by two hail storms. In some parts angular hailstones, some of which were the size of a hen's egg, in less than ten minutes, covered the ground with a solid mass of ice, to the depth of a foot. Every thing was torn up, cut to pieces, and destroyed. Torrents of water, in the sequel, covered these miserable wrecks with sand, pebbles, and rubbish. The whole country presents a scene of desolation not to be described, and the wretched inhabitants are wandering about in despair, without food, and without shelter.—(Pub. Ledger, *July* 24.)

TABLE CIX.

1815.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7 mo. July 29	W	30·17	30·08	30·13	29·98	75°	55°		
30	NE	30·15	30·08	30·17	30·05	72	54		—
31	NE	30·24	30·15	30·21	30·15	63	45		2
8 mo. Aug. 1	NW	30·25	30·23			71	50		
2	NW	30·23	30·19			70	59		
3	NE	30·19	30·10			75	55		
4	SW	30·10	29·87			79	55		
5	W	29·76	29·75			78	52		—
6	NW	29·96	29·76			65	46		25
7	NW	29·97	29·96			69	45		
8	E	29·99	29·97			71	49		
9	NE	29·99	29·97			70	50		
10	SW	29·97	29·66			71	58		
11	NW	29·44	29·35			69	44	50	—
12	NW	29·68	29·44			67	50	50	22
13	SW	29·93	29·68			71	49	50	
14	SW	29·94	29·93			78	59	47	7
15	SW	29·94	29·64	29·97	29·72	75	59	48	2
16	NW	29·77	29·51	29·84	29·56	78	50	49	35
17	SE	29·89	29·87	29·93	29·84	70	50	42	
18	Var.	29·87	29·60	29·90	29·60	72	54	65	28
19	W	29·77	29·58	29·80	29·64	67	45	49	
20	NW	29·86	29·77	29·92	29·80	68	47	43	
21	Var.	29·86	29·70	29·93	29·77	69	49	45	
22	Var.	29·70	29·58	29·77	29·62	75	59	80	—
23	NW	29·91	29·58	30·00	29·62	72	58	52	86
24	SW	30·02	29·99	30·12	30·00	79	55	53	
25	SW	29·99	29·89	30·10	29·90	76	63	46	—
26	SW	30·00	29·89	30·20	30·00	75	50		16
		30·25	29·35	30·25	29·35	79	44		2·23

NOTES.—Seventh Mo. 29—31. Fine.

Eighth Mo. 1—3. Fine. 4. Very bright starlight. 5. Rainy evening. 6. Showery day: a thunder storm, with hail, about 2 p. m. 11. Windy: *Cumulostrati:* and in the evening *Nimbi,* with a little rain. 12. Much wind, with *Cumulostratus:* thunder and rain from N twice p. m., after which more calm. 13. Fine: much wind, with *Cumulus:* coloured *Cirri,* evening. 14. Cloudy morning: temperature 71° at nine: hygrometer at eight 60°: windy: a smart shower by 15. Windy: *Cumulus* capped, and *Cumulostratus:* lunar co- ght, followed by rain. 16. Fair and windy a. m., with clouds.

About 4 p. m. at the precise time of the barometer's turning to rise, came a very heavy shower, with two claps of thunder. 17. Fair: somewhat windy: large *Cumulostrati.* 18. Rain till 9 a. m., after which fair: brilliant sunset and moonlight. 20. *Cumulostratus,* low and stationary. 21. *Cumulus,* with *Cirrus* above, having little motion: p. m. the wind went to NE, and the clouds descended, showing a corona round the moon. 22. Overcast a. m. with thunder clouds, the wind SE: very heavy sudden shower before one: wet p. m. 23. Rain and wind early this morning, with thunder, the wind SE: after which sweeping showers from NW, and much wind by night. 24. Fair, with NW wind and *Cumulus:* then SW, with *Cirrocumulus.* 25. Fine day: *Cumulus,* with *Cirrus:* strong breeze. 26. A little rain early: heavy showers, evening.

RESULTS.

Winds for the most part Westerly.

Barometer:	Greatest height . .	30·25 in.	[By Clock 30·25 in.]
	Least . . .	29·35 in.	[. . 29·35 in.]
	Mean of the period	29·88 in.	[. . 29·90 in.]
Thermometer:	Greatest height .	79°	
	Least . . .	44°	
	Mean of the period	62·13°	[Lab$^{y.}$ 62·724°]
Evaporation (at the Laboratory)		4·00 in.	
Rain		2·23 in.	

Water Spout.

On Tuesday the very singular phenomenon of a water spout was observed at Marsden, near Huddersfield. It appeared to be formed of a dense black cloud, and resembled a very long inverted cone, the lowest part of which seemed nearly to touch the ground; above it the clouds were white and fleecy, forming a striking contrast with it, but they appeared strongly agitated. Our correspondent concludes his description with stating, "that the spout, when completely formed, appeared to be round and smooth, and hollow within, and there appeared a stream of water running down the inside, part of which in its descent passed to the outside, and was carried up again very rapidly, by a spiral motion. The whole duration of this phenomenon was about twenty minutes."—(Pub. Ledger, *August* 18.)

Extract of Letters from a Friend in Philadelphia. "1815. Third Mo. 22. We have just emerged from a more severely cold winter than has been experienced for many years past. Seventh Mo. 17. Our very great heat this summer reminds me of [the contrast found in] your mild climate."

TABLE XC.

1815.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 8 mo. Aug. 27	S	30·00	29·75	30·10	29·80	76°	54°		
28	NW	29·81	29·72	29·90	29·75	71	50	65	5
29	SW	29·97	29·81	30·06	29·90	68	43	55	
30	SW	29·97	29·97	30·08	30·05	70	51	70	
31	SW	30·05	29·97	30·14	30·04	72	49	47	
9th mo. Sept. 1	*NE*	30·02	29·98	30·14	30·04	73	50	56	
2	*SW*	29·96	29·86	30·04	29·95	76	54	65	—
3	W	29·96	29·88	30·06	29·97	72	56	52	—
4	NW	29·95	29·86	30·02	29·84	73	40	54	6
5	NW	29·97	29·95	30·02	30·00	63	40	51	
6	*W*	30·06	29·97	30·15	30·02	62	31	48	
7	NE	30·11	30·06	30·18	30·15	61	32	78	
8	SW	30·11	30·08	30·20	30·17	65	38	65	
9	SW	30·08	30·04	30·17	30·10	68	36	60	
10	NW	30·05	30·00	30·13	30·08	72	47	53	
11	NW	30·07	30·00	30·17	30·10	74	46	59	
12	SE	30·07	29·92	30·17	29·99	70	42	55	
13	S	29·92	29·80	29·99	29·87	78	39	67	
14	SE	29·80	29·75	29·88	29·83	79	45	45	
15	SE	29·75	29·67	29·83	29·71	77	54	50	
16	Var.	29·80	29·67	29·85	29·70	75	47	62	9
17	SW	30·01	29·80	30·13	29·85	70	50	65	
18	S	30·05	30·04	30·17	30·13	74	51	58	
19	Var.	30·04	29·94	30·15	30·02	68	43	56	
20	SE	29·94	29·87	30·02	29·93	60	34	40	
21	S	29·87	29·69	29·94	29·76			30	
22	S	29·69	29·57	29·76	29·60	71	50	49	11
23	NW	29·57	29·50	29·60	29·54	59	38	69	
24	SW	29·77	29·46	29·80	29·50	58	37	68	26
25	SW	29·80	29·75	29·88	29·80	61	43	72	
		30·11	29·46	30·20	29·50	79	31	58	·57

NOTES.—Eighth Mo. 27. *Cirrus,* passing to *Cirrocumulus* and *Cirrostratus.* 28. Shower early, and again p. m. 29. Lightning in clouds to the E, between three and 4 a. m. with moonlight westward: a fair day, with *Cumulus.* Near 8 p. m. a large meteor was seen to pass from the NE to the N. 30. Much dew: *Cumulostratus* during the day. Hygrometer at 7 a. m. 31. Gray morning: then heavy *Cumulostratus:* very clear night.

Ninth Mo. 1. Misty morning: *Cumulostratus,* which gave place at night to the *Stratus.* 3. A little fine rain early: various clouds fol-owed, and some drops p. m.: a *Cirrostratus* exhibited the prismatic colours at sunset, and some elevated *Cirri* remained long red after it. 4. *Cumulostratus,* after large *Cirri:* showers at evening: rainbow: brilliant twilight. 5. Strong breeze: in the evening the new moon appeared with a well defined disk, and a pale phosphoric light, becoming afterwards gold coloured. 7. Hoar frost: hygr. at 7 a. m. 8. Hygr. at half-past 8. After a fine day, nearly calm and cloudless, the smoke settled over the opposite valley, which was soon filled with a *Stratus.* 9. Hygr. at 10. 10. A veil of light clouds, a. m.: somewhat hazy air, with a smell of electricity. 12. A *Stratus.* 13. Much dew: the evening twilight of late has been generally coloured, and at times streaked with converging shadows, the origin of which could *not* be traced to clouds intercepting the light. 14. *Cirrus* only, which increased during the day, and mostly disappeared in the night: the extremes of temperature near the ground were 83° and 45°: the hygrometer receded nearly to 22°. 15. Clear a. m.: in the evening *Cirri,* and obscurity to the W: after which *Cirrostratus,* and a very distant flash of lightning in the SW. 16. A little rain a. m.: much more cloud than of late has been usual: a *Nimbus* forming in the SW: in the evening steady rain. 17. Large *Cirrus,* passing to *Cirrocumulus:* at sunset a sheet of mixed cloud, while increasing by rapid propagation from NW towards SE, was most beautifully kindled up, for a short time, with flame colour and orange on a purple ground. 18. Fair, with the lighter modifications. 19. Much wind at ENE this morning: hygrometer at half-past 10 a. m. 20. Hoar frost: strong breeze: hygrometer at 3 p. m. 21. *Cirrus,* followed by the intermediate modifications. 22. The sky filled gradually with clouds, both above and below: in the evening they grew black, but the rain came on without any explosion of electricity here. A *fire-balloon,* which I discovered near the SW horizon this evening, appeared to be impelled by different currents in rising, but passed the zenith going at a great rate and elevation towards the E. 23. Cloudy: wind NW: then N: small rain. 24. Early overcast, with *Cirrostratus: the swallows went off, as it appears, this morning:* after a murmuring sound in the wind, usual before southerly showers, we had a drizzling day till evening: the hygrometer did not recede past 68°. 25. A fine day: hygrometer went to 87° in the night.

RESULTS.

Winds light and Variable.

Barometer:	Greatest height .	30·11 in.	[By Clock 30·20 in.]
	Least . . .	29·46 in.	[.. 29·50 in.]
	Mean of the period	29·892 in.	[.. 29·965 in.]
Thermometer:	Greatest height .	79°	
	Least . .	31°	
	Mean of the period	57·00°	[Lab^{y}· 60·00°]
Mean of the hygrometer . .		58°	
Evaporation (at the Laboratory)		3·65°	
Rain		0·57 in.	

Extremes of Wet and Dry.

The great drought which for so long a time prevailed was most severely felt throughout the country; in many parts the water in the ponds used for cattle was entirely exhausted, and none could be procured except from the rivers, in many instances at a considerable distance from the farmer's dwellings. Grass had become so universally scarce, that the farmer was obliged to feed his cattle with hay, as in the severest winter.—(Pub. Ledger, *September* 25.)

For these three weeks past it has rained in Wales almost every day. A gentleman just returned from thence states, that there was no shooting in the beginning of the month, on account of the constant and heavy rains.

(Pub. Ledger, *September* 28.)

It appears from the papers, that much damage was done in Scotland by violent thunder storms, attended with inundations from excessive falls of rain on the 24th, 25th, and 26th of the Ninth month.

Seventh Month, 28, 1815.

Being on a journey, I lodged this night at the hospitable mansion of a friend in Yorkshire. The site commands an extensive and pretty deep valley, in which lies the town of Bradford with a considerable scattered population, and, in the bottom of the valley over against the house, some iron-works. When it grew dark, the large coke fires and flaming chimneys of the latter made a conspicuous appearance, representing a mass of buildings in a state of conflagration. Having enjoyed this spectacle over-night, and happening to wake at an early hour next morning, I looked out, to see what appearance the works would then put on. To my surprise for the moment, the various objects which I had before contemplated were not now to be found! An immense *Stratus* had risen, and filled the valley: its level surface, on which the light of the morning began to spread, lay stretched out like a lake, bounded by the opposite hills. But turning my view a little to the left, I recognized the situation of the iron-works by the smoke and flames of the principal furnace, still rising from under this sea of vapour, in a manner which forcibly recalled the description of a submarine volcano. The smoke spread itself horizontally upon the surface of the cloud, probably by the effect of an opposite electricity; but the sun's rays presently began to disturb this arrangement, the *Stratus* was dissipated by six o'clock, and a fine day, as to this neighbourhood, was the result.

Proceeding, however, the same morning on my journey, and passing the mountainous ridge called Blackstone Edge, into Lancashire, I remarked that, precisely at the summit of the ridge, we left the fair weather behind us, and encountered the first of a series of showers, (at intervals indeed heavy rain,) which continued the whole way to Liverpool.

[*Gradation of moisture, as compared with temperature.*

Ninth Mo. 28th at	7	a. m.	Temp. 36°	Hygr. 95°
	8	..	.. 39°	.. 90°
	9	..	.. 42°	.. 80°
	12¼	..	.. 56°	.. 50°
	3	p. m.	.. 59°	.. 42°
	7	..	.. 46°	.. 68°

Thus it appears to be of importance to note the Hygrometer at a fixed hour, with precision; or to set down the *time* with the degree. It would be best always to note this observation at *noon:* to which might be added (by the *diligent*) an observation at sunset and sunrise, or at a fixed distance of time from the sun's rising in summer.]

TABLE XCI.

1815.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 9 mo. Sept. 26	S	29·79	29·63	29·83	29·64	66°	42°		23
27	SW	30·06	29·79	30·12	29·83	61	34	72	13
28	SE	30·06	29·46	30·12	29·50	59	42	80	—
29	W	29·51	29·28	29·52	29·30	65	44	81	34
30	SW	29·49	29·45	29·57	29·42	58	45	60	17
10 mo. Oct. 1	SW	29·72	29·49	29·70	29·42	62	39	71	13
2	NW	30·11	29·72	30·16	29·70	60	33	77	—
3	S	30·11	29·93	30·17	29·98	61	43	83	
4	S	29·97	29·95	30·05	29·97	62	37	65	
5	S	29·95	29·81	30·00	29·84	66	50	80	—
6	N	30·08	29·81	30·10	29·84	63	34	90	50
7	NW	30·20	30·08	30·25	30·10	59	37	79	
8	NE	30·22	30·19	30·27	30·25	56	39	85	
9	E	30·19	30·02	30·27	30·10	57	39	80	
10	E	30·02	29·72	30·10	29·80	55	39	63	
11	E	29·72	29·62	29·80	29·61	55	45	56	54
12	NW	29·73	29·62	29·75	29·61	57	37	75	
13	Var.	29·73	29·65	29·75	29·64	62	51	70	
14	SW	29·76	29·65	29·75	29·64	60	42	60	
15	SW	29·82	29·79	29·87	29·75	60	47	73	5
16	S	29·73	29·71	29·80	29·72	62	46	75	
17	SW	29·85	29·73	29·90	29·80	59	35	73	—
18	SE	29·85	29·52	29·90	29·50	56	46	77	18
19	SW	29·52	29·25	29·50	29·23	63	49	83	16
20	SW	29·45	29·25	29·50	29·23	61	45	60	—
21	SW	29·82	29·45	29·86	29·50	59	33	70	
22	S	29·85	29·57	29·89	29·60	57	42	77	
23	S	29·57	29·47	29·60	29·50	59	50	65	39
24	SW	29·47	29·42	29·50	29·43	59	42	89	10
		30·22	29·25	30·27	29·23	66	33	74	2·92

NOTES.—Ninth Mo. 26. A rainy sound in the trees this morning, from a gale at S: this was followed by rain, during which the wind veered westward. 27. Damp a. m., somewhat misty air: *Cirrus*, with *Cirrostratus:* much wind and a heavy shower by noon, with a suspicious sound, like thunder, at a distance: p. m. a second shower, after which a fine bow in the E, and some distinct *Nimbi, the elevated crowns of which continued to reflect* [coloured] *light for thirty minutes after sunset.* 28. A wet mist a. m., very little wind, the vane, which stood to N, turning to SE: sunshine, with *Cumulus* at noon: large *Cirri* p. m., which were permanent. 29. Rainy appearances in the sky a. m., soon followed by a shower, which came over from SW: much *Cirrostratus* followed, with more rain. 30. Clear a. m.: wind NW: p. m. a veil of *Cirrostratus* advancing from W, completely obscured the sky: in the night a beating rain from the southward.

Tenth Mo. 1. As yesterday, a. m: showers, with rainbow, p. m.: rain by night. 2. Misty morning: much dew: *Cumulostratus,* and a few drops: luminous twilight. 3. Hoar frost: misty air: *Cumulus,* capped with a delicate double sheet of *Cirrostratus: Cirrocumulus* and inosculation followed. 4. *Cirrostratus* in a close veil most of the day. 5. Misty morning: then large *Cirri,* arranged from SE to NW, and passing to *Cirrocumulus,* &c.: rain at night. 6. Wet morning: fair p. m. 7. Hoar frost: slight *Stratus:* a serene day: much dewy haze at sunset, coloured red, first in the E, then in the W above an orange tint. 8. Cloudy a. m. Hygr. at 6. 14. A lunar halo of moderate diameter disappearing, gave place to a portion of a very large one. 15. Rain: the wind fresh at night from SSW. 16. *Cumulus* a. m.: fine day: *a number of swallows, which re-appeared at the end of last month, have kept about our neighbourhood to the present time.* 17. Large *Cirri,* passing to *Cirrostratus:* a little rain p. m.: *Nimbi.* 18. *Cirrostrati* a. m., with obscurity gradually increasing: wet p. m.: much wind, evening. 18. Coloured sunrise: calm, overcast a. m.: then windy, with driving showers, the sky filled with cloud: a tempestuous night. 20. Coloured sunrise, and much wind: a few drops of rain: cloudy night. 21. Clear a. m.: then *Cumulus* in a very blue sky, passing to *Cumulostratus,* which, with some beds of *Cirrus* above, was finely coloured at sunset: I suspected thunder and rain far to the S this afternoon. 22. Misty: much dew: *Cirrostratus, Cumulostratus, Cirrus.* 23. Maximum of temperature at nine this morning: little dew: windy, cloudy: rain. 24. Misty sunrise a. m., with *radii* through broken clouds: a *Nimbus* in SW: rain: about sunset *radii* again, followed by many distinct *Nimbi.* Hygr. at half-past 7.

RESULTS.

Wind chiefly from the N and W.

Barometer: Greatest height	30·22 in.	[By Clock 30·27 in.]
Least	29·25 in.	[.. 29·23 in.]
Mean of the period	29·747 in.	[.. 29·776 in.]
Thermometer: Greatest height	66°	
Least	33°	
Mean of the period	50·79°	[Lab^{y}· 52·27°]
Mean of the hygrometer	74°	
Evaporation (at the Laboratory)	2·12 in.	
Rain	2·92 in.	

TABLE CXII.

1815.	Wind.	Pressure. Max.	Pressure. Min.	By Clock. Max.	By Clock. Min.	Temp. Max.	Temp. Min.	Hygr. at 9 a. m.	Rain, &c.
L.Q. 10mo.Oct.25	SW	29·39	29·33	29·43	29·33	57°	39°	80	
26	E	29·45	29·43	29·50	29·40	53	32	71	
27	NE	29·65	29·45	29·70	29·43	50	43	80	26
28	NE	29·98	29·65	30·04	29·70	51	43	81	35
29	NE	29·98	29·86	30·04	29·86	56	47	75	
30	NE	29·92	29·86	29·97	29·87	50	44	57	—
31	NE	29·94	29·92	30·01	29·97	51	36	60	
11 mo. Nov. 1	NE	29·93	29·92	30·00	29·92	50	41	65	
2	N	30·23	29·93	30·25	29·95	51	33	60	
3	N	30·35	30·23	30·39	30·25	47	25	61	
4	S	30·35	30·25	30·39	30·33	44	30	87	—
5	SW	30·25	30·17	30·35	30·20	51	34	70	—
6	W	30·17	30·06	30·20	30·08	52	40	80	15
7	W	30·06	29·99	30·10	30·00	53	32	83	—
8	W	29·99	29·78	30·00	29·76	53	41	85	—
9	SW	30·06	29·78	30·10	29·76	57	41	75	35
10	SW	30·05	30·02	30·14	30·10	56	44	58	
11	SW	30·02	29·85	30·10	29·90	56	48	78	—
12	S	29·85	28·99	29·90	29·10	57	48	78	75
13	W	29·07	28·95	29·10	28·90	51	35	71	3
14	NW	29·10	29·01	29·10	28·97	44	26	65	
15	Var.	29·28	29·10	29·24	28·98	41	27	77	—
16	NW	29·50	29·28	29·48	29·24	35	25	75	8
17	NW	29·90	29·50	29·87	29·46	36	21	90	—
18	NW	30·06	29·90	30·07	29·87	35	18	85	
19	Var.	30·06	29·72	30·10	29·75	35	25	80	
20	NE	29·62	29·60	29·75	29·60	42	33	80	
21	NE	29 80	29·60	29·78	29 60	42			
22	NE	30·09	29·80	30·03	29·78		25		
		30·35	28·95	30·39	28·90	57	18	76·5	1·97

NOTES—Tenth Mo. 25. Lightning to the N and W last evening. 27. The wind changed to NE this morning: *Cumulostratus,* with inosculation, a. m.: wet p. m. 28. Wet a. m.: fair p. m.: rain again at night: windy. 22. A brisk gale at NE, continued through the day and night: a bank of *Cumulostratus* was visible in the morning in the S, from which quarter *Cumuli* were propagated northwards, changing the state of the superior clouds as they advanced: some *Cirri* in long lines above the whole were not affected: a solar halo appeared from one to 2 p. m., and the sky was turbid beneath the sun. 30. Completely overcast a. m.: windy, drizzling at intervals. 31. *Cirrostratus* tending to *Cirrocumulus,* a. m., beneath large *Cirri* pointing NE and SW: fair.

Eleventh Mo. 1. Low *Cumulostratus* beneath *Cirrostratus:* a breeze at NE, changing at night to NW, without affecting the state of the clouds, which were dense p. m. 2. Breeze at NW a. m.: barometer very steady: *Cumulostratus:* much redness in the twilight. 3. Clear a. m., with *Cirrostratus:* slight hoar frost: coloured sunset. 4. Clear a. m. Temp. on the grass 25°: very white hoar frost, with ice: a fine day: after sunset, a dull purple in the E, with a little orange in the W: the moon conspicuous, the crescent indifferently defined and pale. 5. Rain by 7 a. m.: after which low *Cumulostratus.* 6. A few drops a. m., with the wind S: then fine. 7. Cloudy: rain: lunar corona. 8. Some drops a. m.: then much *Cirrostratus:* sunset with streaks of brown and purple on a yellow ground: moon visible, but its light peculiarly dim: wind and rain in the night. 9. Wet morning: dripping day: lunar corona: wind. 10. Fair, with *Cirrostratus.* Hygr. at 10¾ a. m. 11. A little rain at night: *Cirrostratus.* 12. A fair warm day: various clouds, with a moderate wind: the moon showed a lucid corona: to which succeeded (the wind having risen and veered to S) a continued exhibition of coloured halos, varying in diameter, formed on low, rapidly passing, curling clouds, with an occasional corona, of pale green or yellow, between: a most tempestuous night followed, with rain. 13. Windy: a shower p. m.: the moon gold-coloured. 14. Clear: wind moderate. 15. Cloudy a. m.: windy: a sensible odour of electricity in the air at 1 p. m. 16. A snowy morning: fair p. m. 17. White frost a. m.: little of yesterday's snow remaining: the wind SW: a breeze: a little rain: p. m. a waggon from the north came thickly covered with snow: wind brisk at N at night. 18. Hoar frost: the moon looks like a map, so great is the transparency of the higher atmosphere. 19. Hoar frost and rime on the trees: bodies of thin mist, probably *Cirrostratus,* moved quickly over us this morning from the SW, rendering the tree tops invisible: a fine day: *Cirrus* and *Cirrostratus* at night. 20. *Cumulostratus* a. m.: maximum temperature at nine. 21. *Cirrus* a. m.: *Cirrostratus:* minimum temperature at nine. 22. Fair, with hoar frost.

RESULTS.

Prevailing Winds Northerly, interrupted by a southerly current, which greatly depressed the barometer, soon after the middle of the period, and was followed by a sharp frost.

Barometer:	Greatest height .	30·35 in.	[By Clock 30·39 in.]
	Least . . .	28·95 in.	[.. 28·90 in.]
	Mean of the period	29·783 in.	[.. 29·744 in.]
Thermometer:	Greatest height .	57°	
	Least . . .	18°	
	Mean of the period	41·75°	[Lab^{y}· 42·59°]
Mean of the hygrometer .		76·5°	
Rain		1·97 in.	

TABLE CXIII.

1815.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 11mo. Nov. 23	N	30·28	30·09	30·13	30·03	37°	29°	80	
24	NW	30·46	30·28	30·43	30·23	40	29	86	—
25	NE	30·58	30·46	30·59	30·43	43	29	95	
26	NE	30·58	30·29	30·52	30·22	40	31	90	
27	NE	30·29	30·04	30·22	29·98	39	29	87	—
28	Var.	30·02	29·92	30·00	29·95	35	23	74	
29	SW	30·02	29·84	30·10	29·85	36	25	86	—
30	S	29·75	29·70	29·85	29·68	49	36	90	18
12 mo. Dec. 1	SW	30·04	29·75	30·10	29·75	53	41	93	—
2	SE	30·04	29·96	30·13	29·97	53	42	95	14
3	W	29·96	29·71	29·97	29·70	50	37	96	22
4	NW	29·82	29·70	29·90	29·70	46	39	92	—
5	NW	29·35	29·31	29·90	29·30	48	37	66	38
6	N	29·75	29·30	29·70	29·28	43	36	63	8
7	NE	29·98	29·75	29·98	29·70	36	24	72	
8	NE	30·05	29·98	30·05	29·98	30	23	59	
9	N	30·35	30·05	30·37	30·05	32	25	61	
10	N	30·37	30·33	30·38	30·36	43	30	75	
11	NW	30·37	30·25	30·38	30·22	38	29	66	
12	W	30·36	30·20	30·40	30·20	40	27	80	
13	SW	30·27	30·15	30·30	30·17	44	27	90	
14	SW	30·15	29·75	30·29	29·71	44	30	90	14
15	SW	29·75	29·00	29·71	28·86	49	44	90	13
16	NW	28·90	28·85	28·98	28·76	44	31	65	—
17	W	29·33	28·90	29·30	28·80	36	24	67	—
18	SW	29·55	29·33	29·54	29·30	34	23	78	
19	S	29·55	29·10	29·55	29·10	45	24	80	54
20	SW	29·29	28·98	29·20	28·90	47	35	96	31
21	NW	29·56	29·29	29·50	29·20	39	26	66	
22	SW	29·70	29·56	29·70	29·50	33	27	90	—
		30·58	28·85	30·59	28·76	53	23	80	2·12

NOTES.—Eleventh Mo. 23. Serene, with hoar frost. 24. Hoar frost: light rain for a few minutes, p. m. 25. Hoar frost, with *Cirrostratus* in the horizon: steady breeze. 26. Hoar frost, with clouds coloured at sunrise: clear p. m. 27 Overcast, and some light rain a. m.: *Cumulus* capped, and inosculating with *Cirrostratus*, p. m. 28. Fine: the ground lightly covered with granular snow. 29. Hoar frost: about 1 p. m. a slight snow, granular, and in stars: in the evening a mist over the marshes: and at about 8^h 30′ p. m. a brilliant meteor. It resembled a sky-rocket, and fell almost directly down with an uniform motion, blazing out larger before it became extinct. This meteor, with two others which I lately saw in the same quarter (SW) passing in the same track at about a minute's interval, *had very much the appearance of a simple electrical discharge between two horizontal beds of cloud at different elevations.* 30. Wet a. m.: cloudy p.m., the wind rising, S and SE.

Twelfth Mo. 1. Much wind; and, early, with rain. 2. Fine a. m., with *Cirrostratus:* then *Cumulus,* with *Cirrus.* 3. Very dark a. m., with clouds: wind SE: p. m. *Cumulostratus,* after which *Nimbus* in the horizon: the new moon conspicuous in an opaque twilight. 4. A wet morning: windy at SW: in the fore part of the night much wind. 5. Notwithstanding the dryness of the air, which was also clear below, there was this forenoon a continuous cloud above at a great height, with a hollow sound in the wind. We had a steady rain after this, and a gale of wind in the night. 6. Much wind: *Cumulus,* with *Cirrostratus:* wet p. m.: a gale through the night, shifting to N and NE. 7. Cloudy a. m.: the barometer, which the NW wind failed to bring up, now rises, with a continued hard gale from NE: the hygrometer receded to 51°: in the evening the moon's disk appeared small, and its light scanty, though no visible cloud intervened. 8. Clear, dry, windy morning. 9. Steady breeze: clear: hygrometer receded to 48°. 10. Sleet a. m.: lunar halo, evening. 12. For these three days past we have had a pleasant, clear air, with a fragrant smell, like that which exhales from the dry turf after showers. 13. Cloudy a. m.: drizzling: the windows of a room without a fire, for the first time this season, collect moisture on the *outside,* remaining dry within: *sounds come louder than usual from the NE.* 14. Hoar frost: a fine day: after dark, a lunar corona, occasioned by bars of *Cirrus* pointing N and S, and appearing to converge in the horizon. These soon passed to *Cirrostratus,* and were followed by wind and rain from the southward. 15. Much wind: cloudy: some rain: a very stormy night, with showers. 16. *Cumulus* mixed with *Cirrostratus:* early in the afternoon the lofty summits of the former, rising from a fore ground of the latter on the E horizon, presented the resemblance of an Alpine landscape. In the evening, and on 17, a. m. the wind NW, with *Nimbi,* bringing some snow, followed by much cloud, and a gale at evening. 18. Fine day. 19. Hoar frost: clear: then overcast from the south, and some snow in loose large grains. In the evening more snow, followed by rain from S. 20. Cloudy a. m.: much wind at S, with a hollow sound; rain p. m. and a gale through the night. 21. Fine morning: the ground slightly frozen. 22. Very white frost: *Cirrus* above, and *Cirrostratus* to the SE: a little granular snow on the ice. Snow in the night.

RESULTS.

Winds Variable, but with a larger proportion of Northerly than usual at this season.

Barometer:	Greatest height .	30·58 in.	[By Clock 30·59 in.]
	Least . . .	28·85 in.	[.. 28·76 in.]
	Mean of the period	29·839 in.	[.. 29·834 in.]
Thermometer:	Greatest height .	53°	
	Least . . .	23°	
	Mean of the period	35·96°	[Lab^{y}· 23 days 38·30°]
Mean of the hygrometer .		80°	
Rain		2·12 in.	

St. Petersburgh, *November* 22.—The weather is still mild, and the navigation quite open; merchantmen arrive and depart from Cronstadt daily.

Hamburgh, *December* 8.—By the severe frost which we have had for these two days, the Elbe is covered with ice almost to Blankenese, and the navigation entirely interrupted.

The Lark packet arrived at Harwich on Friday from Cuxhaven. A dreadful hurricane was experienced on the opposite coast, which continued from the 7th to the 9th instant.—(Pub. Ledger.)

It appears by the papers, that this gale was exceedingly destructive to the shipping on our own eastern coast.

Temperatures of Tottenham and Plymouth compared.

In the Results of Table XLII. I have inserted a comparison (from data furnished by a friend) of the respective Temperatures of Tottenham and *Exeter,* during the Second month, 1810. My friend, James Fox, jun. has since gone into a comparison of the Temperatures of Tottenham and *Plymouth,* for the years 1814 and 1815, the Results of which may be seen in the Annals of Philosophy, vol. viii. p. 434–5.

The Mean Temperature of Plymouth for these two years, taken together, is 49·95°; of Tottenham, for the same period, 48·31°; difference in favour of the former 1·64°. This is a result which I have deduced from the above communication; and it is what we might have expected, Plymouth being near a degree *south* of Tottenham. But it appears that the greater warmth of Plymouth is chiefly found in the *nights,* (which are warmer than ours nearly throughout the parallel,) as also in the *days* of *winter,* when these are inclined to frost. In *summer* the days attain a higher Temperature about London, and the difference is considerable; the heat at Plymouth being then kept down by the same means (the vicinity of a great exposure of sea) which moderates to that part of the island the cold of winter. Thus it is proved by the evidence of the thermometer, that the climate of Devon is entitled (in conformity to general opinion heretofore) to the character of a more *equable*, and consequently, in the case of invalids, a more salubrious *temperature* than our own.

TABLE CXIV.

1815.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 12 mo. Dec. 23	SW	29·70	29·27	29·70	29·23		32°	83	
24	SW	29·50	29·25	29·60	29·30	42°	27	80	
25	SW	29·78	29·53	29·77	29·55	36	21	76	
26	SW	29·53	29·00	29·55	28·95	43	40	83	—
27	Var.	29·86	29·00	29·90	28·96	41	25	80	—
28	SW	29·88	29·75	29·90	29·78	46	32	77	39
29	NW	30·09	29·88	30·10	29·83	50	41	77	—
30	SW	30·52	30·09	30·55	30·10	43	22	55	
31	SW	30·52	30·33	30·55	30·45	35	24	90	
1816. 1 mo. Jan. 1	SW	30·33	30·20	30·42	30·23	39	22	94	
2	NW	30·20	30·01	30·23	29·96	33	21	80	
3	SW	30·32	30·00	30·38	29·98	38	24	90	
4	SW	30·32	30·14	30·37	30·14	37	26	95	
5	SW	30·14	29·79	30·14	29·80	45	34	77	
6	W	29·78	29·60	29·80	29·63	49	35	91	6
7	NW	29·78	29·63	29·95	29·65	40	32	61	13
8	S	29·40	29·30	29·65	29·23	49	41	94	13
9	SW	29·34	29·31	29·50	29·20	48	41	67	13
10	W	29·31	28·90	29·44	28·90	50	41	70	24
11	NW	29·42	28·90	29·45	28·85	47	36	61	
12	SW	29·42	28·96	29·47	28·91	43	32	55	17
13	SE	29·15	28·87	29·15	28·83	39	29	79	2
14	S	29·32	29·26	29·37	29·15	43	31	86	5
15	W	29·56	29·08	29·55	29·07	42	33	91	27
16	SW	29·35	29·20	29·72	29·20	47	34	67	44
17	SW	29·63	29·35	29·65	29·30	39	30	75	
18	SW	29·64	29·60	29·66	29·62	42	29	80	—
19	SW	29·64	29·45	29·65	29·44	40	29	98	10
20	W	29·45	29·16	29·45	29·14	38	29	85	5
		30·52	28·87	30·55	28·83	50	21	79	2·18

NOTES.—Twelfth Mo. 23. A thaw p. m., with a little rain: windy night. 24. Dew and *Cirrostratus,* a. m.: cloudy at intervals: windy at SW, yet it froze in the evening. 26. Maximum of temperature at 9 a. m., and beginning to rain: much wind, especially about sunset. 27. It is said to have lightened much early this morning: a stormy day, with rain and snow. 28. Temperature at the *minimum* at nine a.m.: snow: sleet: rain. 29. Temperature at *maximum* at nine: a little rain: a gale through the night. 30. Fine morning though with a pale sky: *Cirrostratus,* coloured at sunset: the river Lea rose higher, apparently by the tide, than at any time since 1809. 31. Hoar frost: a frozen mist, with *Cirrostratus* above, followed by a fine day.

1816. First Mo. 1. Misty air: *Cirrostratus.* 2. Hoar frost: a frozen mist, depositing much rime: the middle of the day fine. 3. Fine morning: the roads icy, it having thawed some part of the night. 4. Hoar frost: *Cirrostratus* in flocks: a breeze. 5. Coloured sunrise: fine, with *Cirrostratus.* 6. *Maximum* temperature at nine: cloudy: the wind rising: very heavy *Cumulostrati,* after some rain: clear windy night. 7. *Minimum* of temperature at nine: elevated *Cirrostratus* in bars, just visible: wind and clouds: a lunar halo. 8. *Maximum* temperature at nine: wet morning. 10. Much cloud, with *Nimbi* forming, p. m.: stormy night. 11. A gale through the day and night: much evaporation evident in consequence: lunar halo. 12. *Cirrostratus* descending from above: a gale, with rain after. 13. Fair day. 14. After frost in the night a shower early: drizzling p. m. 15. Overcast with *Cirrostratus:* rain: clear at night. 16. A slight ground frost: large *Cumuli,* mixed with other modifications, p. m. which going off, showed elevated in the N and NE: to these succeeded linear *Cirri,* filling the sky, and crossing each other almost at right angles: these appearances were followed by a most violent storm of wind and rain in the night. 17. Fair: wind at night. 18. *Minimum* temperature at nine: hoar frost: misty horizon: *Cirrocumulus,* followed by denser clouds, and rain at evening. 19. *Maximum* temperature at nine: very misty: at noon a bank of dense clouds of various modifications in the S: windy at evening: rain in the night. 20. Fair day. 21. Wet morning: the wind SE.

RESULTS.

Prevailing Winds SW.

Barometer:	Greatest height .	30·52 in.	[By Clock 30·55 in.]
	Least . . .	28·87 in.	[.. 28·83 in.]
	Mean of the period	29·615 in.	[.. 29·638 in.]
Thermometer:	Greatest height .	50°	
	Least . . .	21°	
	Mean of the period	36·52°	[Laby. 38·44°]
Mean of the hygrometer at 9 a. m.		79°	
Rain.		2·18 in.	

THUNDER STORM.

A few days since, was experienced such a storm of thunder and lightning, at *Gainsborough,* as scarcely ever was known at this season of the year.

(PUB. LEDGER, *December* 30.)

TABLE CXV.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 1 mo. Jan 21	SE	29·30	29·15	29·40	29·13	43°	37°	92	16
22	SE	29·42	29·30	29·45	29·38	44	36	93	
23	SE	29·42	29·16	29·40	29·14	43	37	93	—
24	E	29·16	29·01	29·14	28·97	43	34	81	17
25	NE	29·17	29·01	29·16	28·97	39	34	86	
26	NE	29·52	29·17	29·55	28·96	40	34	96	3
27	N	30·00	29·52	30·07	29·55	41	29	76	—
28	N	30·30	30·00	30·34	30·07	36	29	78	—
29	NE	30·38	30·30	30·42	30·34	33	23	84	
30	SE	30·38	30·27	30·42	30·30	32	21	85	
31	SW	30·27	29·93	30·30	29·95	34	21	74	
2d mo. Feb 1	SE	29·93	29·64	29·95	29·65	35	19	75	
2	SW	29·64	29·42	29·65	29·37	40	26	85	25
3	S	29·47	29·43	29·49	29·37	48	37	100	
4	SW	29·40	29·37	29·47	29·36	45	33	98	—
5	S	29·37	29·09	29·40	29·05	39	35	100	15
6	SE	29·09	28·90	29·05	28·79	38	31	97	—
7	NE	29·31	28·90	29·20	28·79	31	15	77	1·38
8	N	29·62	29·31	29·63	29·20	24	7	76	
9	E	29·68	29·62	29·68	29·60	20	–5	80	
10	SW	29·77	29·65	29·80	29·64	30	19	75	
11	N	30·25	29·75	30·20	29·80	37	18	60	—
12	N	30·35	30·25	30·39	30·20	32	11	56	
13	Var.	30·31	30·24	30·33	30·28	36	22	72	
14	W	30·35	30·31	30·40	30·30	39	25	88	
15	SW	30·35	29·96	30·30	29·85	44	32	99	—
16	NE	29·82	29·73	29·90	29·72	47	33	75	
17	NW	30·04	29·82	30·07	29·90	38	26	56	—
18	SW	29·88	29·77	30·07	29·80	41	27	54	—
19	SW	29·96	29·88	30·03	29·93	45	37	80	7
		30·38	28·90	30·42	28·79	48	–5	81	2·21

Notes.—First Mo. 21. A dripping day. 22. *Nimbi* grouped with other clouds: fine at midday. 23. Overcast. 24. Drizzling rain in the night. 25. Overcast. 26. The same: a fog on the Thames appeared from hence as a dense bank of cloud in the horizon: a little rain by night. 27. Fresh breeze: cloudy: p. m. a shower, with hail: night frosty. 28. Fresh breeze: drizzling rain: snow: fair p. m. 29. Hoar frost: cloudy: fair. 30. Very white frost: misty horizon: sunshine after. 31. As yesterday, a. m.: at noon hygrometer 50°: the dust flies: Wind SW p. m., with the usual sound for rain.

Second Mo. 1. Hoar frost: fair. 2. Ice now about two inches thick: after hoar frost, a misty thaw: wet and windy evening. 3. Fair: moisture on the outside only of the windows. 4. Strong breeze at S: misty, rain, followed by *Cumulus,* with *Cirrostratus.* 5. Very misty: the trees dripping. 6. Small and heavier rain by intervals: sleet at evening. 7. A gale from NE, which came on last night, has brought a deep snow: snowy at intervals through the day. 8. A smart breeze, with clear sunshine: the roads sloppy at midday: some distant clouds in the horizon at sunset. 9. A continued sunshine produced not the least effect on the ice to-day: hygrometer at 3 p. m. 47°: there was a mistiness perceptible, to a certain height, round the horizon: the wind a gentle breeze. 10. For remarks on this night see the sequel. 11. Hygrometer as yesterday nearly: sleet, snow, and rudiments of hail in minute quantity. 15. After three days of clear sky (a little *Cirrostratus* excepted) an extremely misty air: different clouds followed, and a few drops by inosculation. 16. *Cirrostatus* in flocks a. m.: wind changed to SW, then to NW, and blew strong at night: hygrometer receded to 46°. 17. Frost on the ground from evaporation merely: the air by two thermometers not being below 33°: the snow mostly gone; but a very thick ice remains on the water: *Cumuli* rose this morning, and passed to large spreading *Cumulostrati.* 18. Obscurity to the NE: snow p. m. which melted in the night.

RESULTS.

Winds Northerly and Easterly.

Barometer:	Greatest height .	30·38 in.	[By Clock 30·42 in.]
	Least . . .	28·90 in.	[.. 28·79 in.]
	Mean of the period	29·696 in.	[.. 29·70 in.]
Thermometer:	Greatest height .	48°	
	Least . . .	–5°	
	Mean of the period	32° [Lab^{y}· 32·95°]	
Mean of the hygrometer at 9 a. m.		81°	
Rain and melted snow . .		2·21 in.	

A night on which Fahrenheit's thermometer remains for some hours below *Zero,* is, in this climate, a rare occurrence: probably not above five of them fall within a century; the last appearing to have been 19 years ago. It is observable that this extreme low temperature is not, as might be expected, peculiar to long-continued frosts, but happens rather at an interval of one winter after such a season. Such was the frost of 1794–5, which lasted forty-four days, one whole day's remission excepted, immediately before which the thermometer had descended to —2; but in 1796–7, I find a temperature recorded of —6·5, with circumstances that indicate its having continued below Zero for some hours. Again, the character of the winter before last will be fresh in remembrance: the minimum of that season appears to have been not lower than 5°; and we have now a depression reaching to —5. I do not, however, lay much stress on this analogy, which is pointed out rather for the use of future observers.

I was prepared to expect the intense cold of the night of the 9th to 10th of Second month, by the circumstance of a temperature of 7, (or probably 5°) on the night before, being followed by a clear day, with the wind at E, and a maximum for the day of only 20°. Early in the evening, on trying the experiment of placing a wet finger on the iron railing without, it was found to adhere immediately and strongly to the iron. I exposed several thermometers in different situations. At 8 p. m., a quicksilver thermometer, with the bulb supported a little above the snow, stood at *Zero:* at 11 p. m., a spirit thermometer in the same position indicated — 4; the former, which had a pretty large bulb, had not sunk below — 3. At half past 7 a. m. the 10th, a quicksilver and a spirit thermometer, hung over-night about eight feet above the ground, indicated respectively —3, and were evidently rising. The thermometer near the surface of the snow had fallen to — 5, and probably lower; but at the usual height from the ground of my standard thermometer, the temperature was at no time below — 5. The exposure is north, and very open.

From 8 a. m. the thermometer continued to rise steadily: at noon a temperature of 25° was pleasant, by contrast, to the feeling, and it was easy to keep warm in walking, without an upper coat. Even at *Zero,* however, the first impression of the air on the skin was not disagreeable, the dryness and stillness greatly tending to prevent that sudden abstraction of heat which is felt in moist and quickly flowing air. Early in the afternoon the wind changed all at once to SW; some large *Cirri,* which had appeared all the day, passed to *Cirrocumulus* and *Cirrostratus,* with obscurity to the south. I now confidently expected *rain,* (as had happened in former instances,) but was deceived; and the thaw took place with a dry air for the most part, and with several interruptions by night.

During these two days the barometer, which had risen rapidly, fluctuated between 29·6 and 29·7 inches, and immediately afterward resumed its course, and rose at the same rate as before.

The mean temperature of this period is precisely 32°; and it is remarkable, that the mean temperature of each of three similar periods of frost, comprehended in the long winter of 1813–14, does not vary a degree from 32°; though preceded and followed by periods which respectively exhibit a mean of about 44°. On examination, I perceive that this analogy might be extended further.

The gale at NE, with which this frost came in, brought with it abundance of snow, which loaded the trees to their tops, and weighed down the smaller shrubs to the ground. The peculiar clinging quality of some snows merits enquiry. It is in part the result of the needly crystallized texture, aided by a degree of moisture attending, which afterwards freezes in the mass; but as light volcanic ashes have been found likewise to possess this quality, and in a still higher degree, perhaps we ought to attribute something to the electric charge with which each of these light bodies arrives at the earth. The seasonable covering which snow affords to the vegetable kingdom is matter of common remark; but it is not so generally understood in how great a degree the very circumstance of its production abates the first rigour of the cold. Just before this snow the air was extremely moist; the snow cleared it of an inch and a half, nearly, of water, and it has since indicated considerable dryness. Now it is quite probable that the *vapour* which afforded this water was found, by the supervening NE current, diffused in our local atmosphere, and by it decomposed. In this case the *latent or constituent heat* given out by the vapour in passing to the solid state, must have gone in great part to raise the temperature of that current. Hence a considerable interval, of gradually increasing cold, before we experienced its extreme effects; during which too, the earth got provided with its accustomed covering.

After a copious fall of snow, an observer may find, in the scenery which it forms, some things on which to exercise his powers of reflection. The pensile drifts, which in a mountainous country are objects of just alarm, may be contemplated, here, to discover the principles of their construction, and the manner in which they rest on so narrow a base. When the sun shines clear, and the temperature is at the same time too low for it to produce any moisture, the level surface may be found sprinkled with small polished *plates of ice*, which refract the light in colours as varied and as brilliant as those of the drops of dew. At such times, there are also to be found on the borders of frozen pools, and on small bodies which happen to be fixed in the ice and project from the surface, groups of feathery crystals, of considerable size, and of an extremely curious and delicate structure. From the moment almost that snow alights on the ground, it begins to undergo certain changes, which commonly end in a more solid crystallization than that which it had originally. A notable proportion evaporates again, and this at temperatures far below the freezing point. On the night of the 10th of the Second month I exposed one thousand grains of light snow, spread on a dish (which had previously the temperature of the air,) of about six inches diameter. In the first hour after dark it lost five grains; in the second, four grains; in the third it acquired a grain, the wind having changed, and the temperature which had been falling from 25°, inclining to rise again. The hygrometer was at 50°, with a gentle breeze at east. In the course of the night the loss was about sixty grains. This evaporation from snow may very well supply the water for forming those thin mists, which appear in intense frost: and a slight increase during a part of the time, in this experiment, may throw light on the formation of the secondary icy crystallizations above mentioned. It appears that the air in a still frosty night becomes partially loaded, either with spiculæ of ice, or with particles of water, at a temperature below freezing, and ready to become solid the moment they find a support. Hence the rime on trees, which is found to accumulate chiefly on the windward side of the twigs and branches.

As to those more copious mists, of the modification *Stratus*, which accompany the setting in of long frosts, I conceive them to originate in part from the yet unfrozen rivers, and other waters, near which they are most abundant; in part from the moisture of the earth itself: for it is contrary to experience to suppose, that the frozen state of the surface can prevent the ascent of vapour from the porous soil below: which will continue to emit it, until its temperature becomes, by the gradual penetration of the frost, nearly on a level with that of the cold air then constantly flowing over it.

The snow on the Grampian Hills, in Scotland, is at this time of a greater depth than has been known for the last twenty years. Vast flocks of grouse have come down from them for shelter.—(PUB. LEDGER, *February* 23.)

EARTHQUAKES FELT AT SEA.

Extract of a letter from *Madeira*, dated February 5.—"On the 1st instant, about twelve o'clock at night, a severe shock of an earthquake was felt all over the island; and the following morning, at four o'clock, another shock was felt."

The shock of an earthquake, which we lately stated was experienced at *Lisbon*, about one in the morning of the 2d of February, was repeated rather more slightly at seven. The first is supposed to have lasted from two and a half to three minutes, and was generally and regularly felt in the whole city.

February 27.—A few days since the Ann transport, A. Clarke, master, arrived at Portsmouth, from Antigua. On the 2d February at forty-five minutes past 11 a. m. being a little to the southward of the latitude of Lisbon, and about a hundred and fifty miles to the eastward of *St. Mary's* (one of the Western Islands), experienced the shock of an earthquake. The spot precisely was long. 19°30′W, 7° 30′ N. The sensation produced was what would have been felt had the ouched the ground, or her motion been impeded by a strong counter-undulating current; the masts trembled, as they would preceding their fall over the ship's side. The ship was thrown aback, with the sails; and the lead being thrown, with a hundred and fifty fathoms of line, no ground was touched. At 20 minutes after three o'clock, on the same day, she experienced another shock, which produced the same sensations, but in a much less degree; the ship was then in long. 17° 4′ W, lat. 39° N; the lead was again thrown, and no bottom could be found with two hundred fathoms of line. After this period, until three o'clock on the following morning, the 3d instant, several other similar convulsions were felt—but every successive one producing a less effect: the whole number of shocks was twelve.

Extract of a letter from Captain Welsh, of the Claudine, arrived in the Downs from Batavia.—"On the 9th of February, off *St. Michael's*, we experienced very tempestuous weather, with a tremendous confused sea. The wind shifting from SW to SE and NE, with constant lightning and heavy rain. On the 10th, at half-past 8 p.m. the ship then under reefed fore-sail and main-stay sail, we were much alarmed by a severe shock of an earthquake, which lasted four or five seconds.—(PUB. LEDGER.)

EVAPORATION ON THE AFRICAN CONTINENT.

From Campbell's Travels in South Africa, 1813, Aug. 25; while passing down the Orange River. 'Being now far from the sea in every direction, there was none of that moisture in the air which the sea communicates, but a peculiar dryness, so that my ink was almost instantly dried up in the pen; and however wet the pencil I used for my sketches in water colours, it was almost dry before it could touch the paper.'

Sept. 7.—A few clouds appeared in the evening at the bottom of the horizon to the W, which were viewed as a rarity; having had almost constant sunshine with a clear sky for more than three months.

Sept. 26.—Our approach to the ocean was both seen and felt; felt by the coolness, and seen by the heavens being covered with clouds.

[Thus the clearness and *dryness* which, in our insular situation, result commonly from frost, and are occasional only, in the interior of a large continent prevail through whole seasons, periodically, in the midst of great heat.]

TABLE CXVI.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a.m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2 mo. Feb. 20	NE	30·00	29·88	30·10	29·90	47°	34°	80	
21	W	30·07	30·00	30·13	30·10	46	36	75	4
22	SW	30·19	30.07	30·27	30·13	49	34	80	—
23	S	30·19	30·11	30·28	30·13	50	27	98	
24	SW	30·11	29·99	30·13	30.00	50	35	70	
25	SW	30·04	29·85	30·10	29·85	53	32		12
26	NW	30·15	30·11	30·16	29·90	50	39		
27	W	29·75	29·45	29·90	29·36	51	29		8
28	NW	29·88	29·75	29·95	29·67	40	22		
29	NW	29·86	29·82	29·90	29·87	35	25	53	
3rd mo. March 1	S	29·82	29·43	29·86	29·55	41	28	59	
2	SE	29·43	29·15	29·55	29·12	42	36	75	25
3	SW	29·25	29·06	29·22	29·03	45	29	80	10
4	SW	29·19	29·13	29·20	29·10	46	26	76	21
5	S	28·97	28·90	29·18	28·75	44	32	74	—
6	SW	29·10	28·92	29·06	28·73	46	33	67	34
7	S	29·13	29·02	29·14	29·06	50	32	76	27
8	NE	29·32	28·99	29·16	28·90	43	33	80	18
9	N	29·67	29·32	29·60	29·16	38	30	75	—
10	NW	29·87	29·86	29·96	29·60	41	26	62	
11	SW	29·65	29·62	29·85	29·63	50	41	77	39
12	SW	29·64	29·50	29·70	29·54	52	40	90	8
13	W	29·87	29·82	29·97	29·70	52	38	70	—
14	SW	29·82	29·32	29·90	29·30	52	43	83	—
15	S	29·76	29·32	29·82	29·29	52	26	58	23
16	W	29·74	29·67	29·80	29·72	49	30	73	
17	SW	29·74	29·49	29·80	29·50	47	34	60	—
18	NW	29·56	29·43	29·57	29·43	52	35	78	17
19	N	29·91	29·56	29·94	29·57	47	34	51	3
		30·19	28·90	30·28	28·73	53	22	72	2·49

NOTES.—Second Mo. 20. Light clouds. 21. Several birds sing: *Cirrostratus* beneath large *Cirri.* 22. Cloudy: drizzling: fair: windy. 23. White frost, which speedily went off: there appears to have been a dripping mist in the night: *Cirrocumulus:* fair. 24. *Cirrus: Cirrostratus:* cloudy: hollow wind. 25. A gale from SW, with showers: changed to NW in the night. 27. A snow shower

h was followed by sleet and rain: much wind in the night.
Cirrostratus, a m.: windy: *Cumulus* and *Cumulostratus*
29. Slight hoar frost; fair, with light clouds: hygrometer
2.

Third Mo. 2, 3. Rain at intervals. 4, *Cirri*, a. m. consisting of streamers rising from a horizontal base, with *Cirrostratus* below: heavy clouds: wind: p. m. hail, sleet, rain: lastly, upon the wind getting somewhat northerly, a heavy short storm of snow. 5. Clear a. m.: the ground crusted with yesterday's snow. 6. Various modifications of cloud, a. m.: heavy showers, p. m. 7. Cloudy: some rain, a. m.: *Nimbi*. 8. Rainy. 9. Snow storm: much evaporation: fair night. 10. Fair. 11. Stormy: very wet. p. m. 12. Temperature 50° at 9 a. m.: wind and rain. 13. Much wind: rain at intervals: *Nimbi*. 14. Wet morning: the wind SE: stormy day and night. 15. Much wind: rain, p. m.: calm at night. 16. Hoar frost: fair: calm: hygrometer went to 45°; and although it was overcast through the day, with the usual indications of rain in the sky, yet none fell. 27. *Cirrus*, with other light clouds, a. m.: wet, p. m. 18. Wet morning: hollow southerly wind, which changed to NW, with *Nimbi*, at night, and blew strong. 19. A raw blustering day, with much evaporation evident.

RESULTS.

Prevailing Winds Westerly.

Barometer:	Greatest height .	30·19 in.	[By Clock 30·28 in.]
	Least	28·90 in.	[.. 28·73 in.]
	Mean of the period	29·606 in.	[.. 29·634 in.]
Thermometer:	Greatest height .	53°	
	Least . . .	22°	
	Mean of the period	39·46°	[Lab^{y}· 41·36°]
Mean of De Luc's hygrometer		72°	
Rain		2·49 in.	

Character of the period cloudy, wet, and windy: vegetation has made but little progress.

EARTHQUAKE.

On Sunday, March 17, about half-past twelve o'clock, a violent concussion of the earth was sensibly felt at Doncaster, and at Bawtry, Blyth, Carlton, Worksop, Sheffield, Chesterfield, Mansfield, Nottingham, Lincoln, Gainsborough, &c.—(DONCASTER PAPER.)

On Sunday a smart shock of an earthquake was perceptibly felt in Lincoln, at about ten minutes before one o'clock in the day. The undulation appeared to be from west to east, and lasted from about a minute and a half to two minutes. The wind was at the time SE, cold, and with every appearance of rain. Pictures and other articles hanging on walls were set in a swinging motion. At Newark, also, and the neighbouring villages, the shock was distinctly felt, as well as at Leicester and Loughborough.—(STAMFORD PAPER.)

TABLE CXVII.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3 mo. Mar. 20	NW	29·96	29·91	30·00	29·94	47°	32°		
21	E	30·01	29·96	30·09	30·00	48	28		
22	SE	30·20	30·01	30·22	30·08	53	35	70	
23	E	30·27	30·20	30·32	30·22	48	34	55	
24	NE	30·27	30·08	30·32	30·07	39	34	55	
25	NE	30·08	30·05	30·13	30·05	41	34	58	
26	NE	30·14	30·08	30·17	30·13	42	35	60	
27	NE	30·14	30·10	30·17	30·10	42	33	62	
28	E	30·12	30·10	30·17	30·11	42	33	53	
29	E	30·16	30·12	30·24	30·16	43	32	47	
30	E	30·15	30·12	30·27	30·24	45	25	51	
31	SE	30·15	30·07	30·24	30·05	47	26		
4 mo. April 1	SE	30·07	29·80	30·03	29·80	50	29	61	
2	SE	29·79	29·75	29·80	29·77	47	29	53	
3	SE	29·91	29·79	29·97	29·80	43	27	49	
4	E	29·97	29·95	30·00	29·97	51	26	60	
5	Var.	29·95	29·58	29·96	29·55	57	29	75	
6	SW	29·58	29·11	29·55	29·10	55	32	55	16
7	W	29·03	28·95	29·10	28·93	49	33	60	31
8	NE	29·16	29·12	29·14	29·02	48	31	62	
9	N	29·15	29·09	29·14	29·05	46	39	65	21
10	SE	29·44	29·34	29·49	29·14	55	35	69	—
11	NE	29·61	29·44	29·66	29·45	50	38	82	52
12	NW	29·70	29·61	29·75	29·65	49	33	86	32
13	N	29·70	29·49	29·76	29·50	40	24	60	—
14	NW	29·61	29·49	29·60	29·48	40	28		3
15	NW	29·62	29·55	29·65	29·51	45	32	55	
16	SW	29·55	29·38	29·51	29·37	51	40	50	1
17	NW	29·52	29·38	29·55	29·40	56	30	59	
18	SE	29·54	29·48	29·70	29·52	59	36	56	
		30·27	28·95	30·32	28·93	59	24	60	1·56

NOTES.—Third Mo. 21. Breeze: sunshine. 22. The same. 23. About sunset, a body of shallow *Cumulostratus,* with an abrupt boundary forward, advanced from the E. 24. Cloudy: breeze. 25. The same. 26. The same. 27 The same. 28. Breeze stronger, unsteady: *Cumulus.* 29. Breeze: *Cumulus* passing to *Cumulostratus,* which cleared off at night, leaving a little *Cirrus* above. 30. Close *Cumulostratus,* a. m. resembling drapery, frequent in cold spring weather: p. m. more open sky. 31. Large *Cumuli,* a. m.: wind SE, gentle: the temperature was 45° at 10. a m: the roads are now dusty to an extreme: *Cirrus* passing to *Cirrostratus* at evening.

Fourth Mo. 1. Hoar frost: sunshine: *Cirri,* with haze above

2. *Cirrostratus*, with *Cirrus:* breeze much stronger. 3. Windy: hoar frost: *Cirrus.* 4. Hoar frost: sunshine: *Cirrus*, with *Cumulus:* drains emit an offensive gas. (This is a very common circumstance after long settled weather, before a change, and depends unquestionably in great measure on renewed electrical action on the general surface.) 5. White frost: misty from the N: the wind NE: sunshine: at night a lunar halo of the largest diameter: *Cirrostratus.* 6. The higher atmosphere filling, a. m.: *Cirrus, Cirrocumulus*, &c.: wind N: a smart breeze: then SW: wind and rain in the night. 7. Dripping a. m.: sleet: cloudy: windy: *Cumulostrati*, succeeded by numerous *Nimbi*, letting fall showers of large opaque hail, followed by rain: three distinct peals of thunder, p. m.: one N, another S, and a third near at hand, with lightning. 8. Cloudy: windy. 9. Windy at N, and more so in the night, seemingly from the westward: rain. 10. *Cumulostratus:* some dripping: rain by night. 11. Obscurity early a. m., with *Cirrostratus* beneath to S: rain and wind chiefly from the NE: p. m. moderate weather. 12. Sky as yesterday, but *Cirrostratus* to NE: rain at mid-day: in the night a gale from NW, with snow for two hours. 13. The high ground to the W and NW is white with snow, a. m.: with us none remains. 14. White frost (8 a. m.), yet cloudy overhead, and a group far to the N, in which were *Nimbi:* in an hour's time this group reached us, and we had showers of heavy granular snow by intervals. 15. Clear morning: dew: fair, though with *Nimbi* in sight: very high tides, and much water out in the marshes. 16. A moderate gale at S and SW: some rain by night. 17. Cloudy a. m.: calm: mild. 18. *Cumulus, Cirrus:* sunshine, with cool breeze.

RESULTS.

Winds for the most part Easterly, non-electric, keen, and drying.

Barometer:	Greatest height .	30·27 in.	[By Clock 30·32 in.]
	Least . . .	28·95 in.	[.. 28·93 in.]
	Mean of the period	29·762 in.	[.. 29·747 in.]
Thermometer:	Greatest height .	59°	
	Least . . .	24°	
	Mean of the period	39·66°	[Lab$^{y\cdot}$ 41·23°]
Mean of De Luc's hygrometer at 9 a. m.		60°	
Rain		1·56 in.	

The mean temperature of this period is full 8° lower than that of the corresponding portion of 1815. It has accordingly presented a striking contrast to the latter in its effects on the vegetable kingdom; not a single day having occurred in it of that which cultivators emphatically denominate "growing weather"—when a moist air co-operates with a rising temperature to stimulate vegetable life, and make way for the unfolding of its products.

TABLE CXIX.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 5 mo. May 19	NE	29·82	29·76	29·90	29·80	55°	35°	49	
20	E	29·84	29·82	29·93	29·89	65	36	51	
21	NE	29·84	29·77	29·90	29·85	62	41	48	
22	NE	29·82	29·77	29·86	29·80	66	40		
23	N	29·82	29·77	29·90	29·83	65	48	60	
24	N	29·77	29·75	29·83	29·77	56	50	75	—
25	SW	30·03	29·77	30·10	29·78	62	38	70	20
26	SW	30·03	29·90	30·14	29·98	66	43	45	28
27	NE	30·05	29·90	30·13	29·95	62	46	73	—
28	SE	30·12	30·10	30·13	30·08	66	51	45	
29	SE	30·10	29·87	30·08	29·86	69	54		
30	NW	29·87	29·80	29·86	29·80	67	49		
31	NE	30·00	29·80	29·95	29·80	64	46		
6th mo. June 1	NW	30·00	30·00	30·02	29·95	70	55		
2	NW	30·00	29·90	30·00	29·92	72	49		
3	NW	30·08	29·97	30·07	29·95	65	46		
4	SW	30·05	29·90	30·05	29·90	65	50		
5	NW	29·96	29·85	29·90	29·60	67	41		—
6	NW	29·90	29·80	29·88	29·77	64	44	38	—
7	Var.	29·76	29·48	29·77	29·40	61	46	45	20
8	W	29·40	29·15	29·40	29·20	62	42	58	27
9	NW	29·52	29·35	29·50	29·13	57	37	70	1
10	NE	29·86	29·52	29·93	29·50	58	41	47	22
11	SW	30·00	29·86	30·10	29·93	65	39	47	
12	SE	30·00	29·97	30·10	30·07	70	37	45	
13	SW	29·97	29·91	30·07	29·99	75	54	39	
14	N	29·91	29·87	30·00	29·90	53	48	53	8
15	N	29·92	29·86	30·02	29·90	59	44	57	
16	NW	29·92	29·92	30·02	30·00	67	36	57	
		30·12	29·15	30·14	29·13	75	35	52	1·26

NOTES.—Fifth Mo. 19. Hoar frost: a fine day. 20. Clear morning. 23. Cloudy a. m.: much wind at N. 24. Misty: small rain at intervals. The hygrometer, these two days, was noted at 7 a. m. 25. Overcast a. m.: wind at SW: rain evening and night. 25. *Cumulus* cloud by day: *Cirrostratus* at evening. The hygrometer noted at half-past 6 a. m. 27. A wet morning, succeeded by close *Cumulostratus* through the day. 28—31, inclusive. Fair days.

Sixth Mo. 2. A fine breeze: large *Cirri* and *Cumuli*. *Cirrostratus* prevails, with a cooler atmosphere. 5, 6. Showery. 7—10. Rain. 12. The hygrometer receded to 30°: *Cumulus* prevailed, and was succeeded by *Cirrus* in the evening. 13. This afternoon, there was a fine transient display of *Cirrocumulus:* in the N and NW, there was an obscurity, mixed with rudiments of *Nimbus.* 14. After a warm still night, a cold blowing day, with small rain at intervals. 15. Overcast, with *Cumulostratus:* cool breeze: in the evening *Cirrostratus.* 16. A fine day: the air becomes calmer.

RESULTS.

Winds rather Variable, but for the most part Northerly.

Barometer:	Greatest height .	30·12 in.	[By Clock 30·14 in.]
	Least . . .	29·15 in.	[.. 29·13 in.]
	Mean of the period	29·850 in.	[.. 29·876 in.]
Thermometer:	Greatest height .	75°	
	Least . . .	35°	
	Mean of the period (8 days Lab$^{y.}$) .	54·15°	
Mean of the hygrometer (for 20 days) . .		52°	
Rain		1·26 in.	

The character of this period has been, on the whole, ungenial; though not one frosty night has occurred, yet cloudy weather, with blighting winds, mostly predominated; and the mean temperature turns out nearly 5° lower than that of the corresponding portion of 1815.

Cold in North America.

A letter from Quebec, dated June 10, says—"We had a fall of snow here on the 8th instant, several inches in depth. The weather is still cold, and it snows at intervals; the trees are not yet in bloom, and the oldest inhabitant does not remember such a season."

There has not been, for upwards of forty years, so backward a season known in Nova Scotia as the present. Although now in the middle of June, but little vegetation has taken place, and there is scarcely any seed sown in the ground. Ice was seen on the morning of the 11th June, in the harbour, and a few days since snow was falling in different parts of the country.

From New York it is stated, under date of the 15th of June, that the cold weather, and even frosts, continued: in the upper parts of the State, large icicles were pending, and the foliage of the forests was blasted by the frost.

(Pub. Ledger.)

From a Friend.

Wilmington, State of Delaware, Fifth Month, 1817.

"Our winter has been extremely severe. It is supposed to have equalled in cold and duration the winter of 1779—80. Our thermometer during the First and Second month was often near cypher, and many times several degrees below it. I think it was, twice, ten degrees below 0, in this town. In New Hampshire, the mercury froze in the bulb—the thermometer was consequently *thirty-eight* degrees below 0.

TABLE CXX.

1816.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 6 mo. June 17	SW	29·92	29·82	30·00	29·88	67°	48°	—	
18	SW	29·88	29·79	29·98	29·86	71	53	36	
19	W	29·96	29·88	30·06	29·98	69	47	—	
20	N	29·96	29·95	30·07	30·04	74	55	25	
21	NE	29·95	29·95	30·07	30·03	71	51	—	
22	NE	29·95	29·94	30·05	29·85	78	53	21	—
23	SW	29·85	29·82	29·85	29·67	69	50	—	1·06
24	NW	29·97	29·85	29·90	29·70	63	48	—	
25	NE	29·97	29·86	29·90	29·65	73	56	37	
26	Var.	29·60	29·54	29·65	29·40	70	54	—	2·05
27	NE	30·00	29·60	30·02	29·60	63	50	—	
28	NW	30·07	30·00	30·06	29·98	69	47	—	
29	Var.	30·08	29·90	29·98	29·73	78	58	39	
30	Var.	29·90	29·76	29·73	29·62	76	53	16	19
7 mo. July 1	NW	29·80	29·75	29·74	29·62	63	51	—	
2	SW	29·84	29·80	29·76	29·70	73	53	—	—
3	NW	29·86	29·84	29·80	29·70	64	50	—	13
4	Var.	29·75	29·72	29·70	29·57	65	50	44	18
5	Var.	29·88	29·75	29·88	29·68	66	46	—	
6	Var.	29·89	29·75			69	56	—	—
7	S	29·75	29·70			69	52	—	—
8	S	29·70	29·69			70	52	45	26
9	SW	29·69	29·66			70	51	—	—
10	SW	29·66	29·63	29·60	29·49	73	51	—	5
11	NW	29·72	29·66	29·52	29·47	66	54	—	—
12	NW	29·90	29·72	29.64	29·52	65	48	63	—
13	NW	29·94	29·90	29·85	29·64	67	49	—	—
14	SW	29·90	29·69	29·90	29·85	65	58	—	32
15	SW	29·69	29·68	29·86	29·56	71	52	—	12
16	Var.	29·69	29·66	29·58	29·55	63	52	36	77
		30·07	29·54	30·07	29·40	78	46	3·62	5·13

NOTES.—Sixth Mo. 23. Cloudy morning: showery day: evening cold. 24. Cloudy morning: a strong cold wind from the NW. 26. The early part of the morning was fine: wind NE, changed to SW between ten and eleven, and rain began, which continued without intermission all day: in the evening and night it was extremely heavy. 27. Morning very much overcast: the rain fallen from nine yesterday morning to nine this morning amounts to 2·05 inches, a very unusual quantity for the neighbourhood of London. 29, 30. Foggy mornings: overcast.

Seventh Mo. 1. A *Stratus* on the marshes at night. 2. A little rain about 10 p. m. 4. Showery day: some hail about 3 p. m.: wind variable, chiefly SW. 5. Showery morning: the day fine. 6. Morning overcast: heavy dew. 8. Showery morning: fine day: a heavy shower of rain between 9 and 10 p. m. 10. Showery morning: fine afternoon. 12. Cloudy morning: squally afternoon. 13. A heavy shower of rain about 10 p. m. 14. A gentle rain nearly all the day. 15. Rainy morning: showery day. 16. Very rainy day.

RESULTS.

Winds Variable: for the most part Westerly.

Barometer:	Greatest height	30·07 in.	[By Clock 30.07 in.]
	Least	29·54 in.	[.. 29·40 in.]
	Mean of the period	29·816 in.	[.. 29·788 in.]
Thermometer:	Greatest height	78°	
	Least	46°	
	Mean of the period	60·03°	
Evaporation		3·62 in.	
Rain		5·13 in.	

Whirlwind.

June 25.—At two o'clock, being a still sultry day, a whirlwind passed over the nursery-ground of Mr. Henderson, in the Edgware-road, which lifted seven lights from the green-houses and carried them to the height of the highest elm-trees; each of the lights weighs fifty or sixty pounds at least. At the same time two garden-mats were carried to an immense height, so that the eye could not distinguish them.

Snow remaining on the Mountains.

The *Kendal Chronicle* of July 4, says—"A traveller, who has visited the top of Helvellyn this day, brought to the office a lump of snow from that summit. The gentleman informs us, that he saw three or four patches of snow, varying in extent in different directions."

On a hill, the property of Sir A. Ramsey, in the parish of Fettercairn at the distance of little more than twelve miles from the German Ocean, there was a remnant of a wreath of snow, which measured on the 5th July five feet deep and eighty yards in circumference.—(Pub. Ledger.)

I may add to the above proofs of the coldness of the higher atmosphere during this summer, that in passing through Switzerland, I saw the snows of the preceding winter lying in very large masses, in hollows on the chain of the *Jura*, and on the *Mole* near Geneva, from whence they usually vanish in summer; and this at a time when the new snows had already begun to fall on the same summits.

TABLE CXXI.

1816.	Wind.	Pressure.		By Clock.		Temp.		Evap	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7 mo. July 17	Var.	29·66	29·48	29·58	29·52	67°	50°	—	11
18	SW	29·56	29·48	29·52	29·26	66	51	—	—
19	SE	29·75	29·55	29·43	29·27	70	58	—	21
20	SW	29·76	29·57	29·68	29·37	81	65	66	—
21	SW	29·78	29·59	29·67	29·38	70	54	—	—
22	SW	29·79	29·65	29·72	29·42	70	58	—	32
23	SW	29·65	29·65	29·73	29·54	73	55	—	—
24	Var.	29·66	29·65	29·54	29·49	64	52	59	45
25	NW	29·86	29·66	29·52	29·50	65	54	—	5
26	NW	29·95	29·86	29·75	29·53	68	53	—	—
27	NW	29·96	29·80	29·90	29·75	64	53	26	—
28	NW	29·80	29·74	29·90	29·73	64	46	—	
29	Var.	29·74	29·63	29·73	29·65	63	45	—	
30	NW	29·63	29·55	29·65	29·46	64	41	25	—
31	NE	29·65	29·54	29·46	29·37	65	48	10	3
8th mo. Aug. 1	NW	29·80	29·65	29·40	29·34	63	49	—	—
2	W	29·85	29·80	29·75	29·40	67	51	—	27
3	SW	29·88	29·85	29·77	29·75	68	49	41	
4	SW	29·88	29·85	29·83	29·77	69	47	—	
5	NW	29·95	29·80	29·84	29·77	70	51	—	51
6	SW	29·97	29·88	29·90	29·77	68	57	28	3
7	SW	29·88	29·79	29·93	29·83	70	57	—	—
8	SW	29·79	29·77	29·83	29·70	74	55	—	—
9	SW	29·98	29·79	29·70	29·64	67	53	42	—
10	NW	30·06	29·98	29·87	29·64	65	57	—	—
11	SW	30·06	30·06	30·02	29·90	70	57	—	—
12	NW	30·06	30·00	30·02	30·00	67	56	35	26
13	SW	30·00	29·80	30·03	30·01	66	52	—	
14	SE	29·80	29·58	30·01	29·72	68	58	—	8
15	SE	29·59	29·53	29·72	29·40	71	56	25	9
		29·48	29·48	30·03	29·26	81	41	3·57	2·41

NOTES.—Seventh Mo. 18. Squally day. 19. Rainy morning:
very boisterous wind all day, with showers. 20. Fine morning.
21. Showery day: a strong breeze from the SW. 24. Wind variable:
very rainy day: some thunder in the afternoon: a *Stratus* on the
[illegible] Foggy morning: a *Stratus* on the marshes at
[illegible] ower of rain between 1 and 2 p. m.: some hail.
31. Very [illegible]: a thunder storm in the evening.
[illegible] v day. 5. Foggy morning: trees dripping:
[illegible] n: very rainy night.

RESULTS.

Winds Variable: chiefly SW and NW.

Barometer:	Greatest height .	30·06 in.	[By Clock 30·03 in.]
	Least . . .	29·48 in.	[. . 29·26 in.]
	Mean of the period	29·771 in.	[. . 29·671 in.]
Thermometer:	Greatest height .	81°	
	Least . . .	41°	
	Mean of the period	60·43°	
Evaporation		3·57 in.	
Rain		2·41 in.	

STORMS, &c.

Our naval column this day bears the aspect of winter—strong gales, ships on shore, and loss of anchors, are rather unusual in the month of July. (PUB. LEDGER, *July* 24.)

From all parts of the country we hear of damage done by the late storms, and floods occasioned by the heavy rains.—(PUB. LEDGER, *July* 26.)

An earthquake was felt at Martinique on the 15th of August, which lasted a considerable time, and being unusually severe, excited great alarm among the inhabitants.—(PUB. LEDGER.)

EARTHQUAKE IN SCOTLAND.

The letters and papers received from the North bring accounts of this phenomenon, so uncommon in our country. The shock appears to have extended over the counties of Ross, Inverness, Moray, Banff, Aberdeen, Kincardine, Forfar, Perth, and Fife; and was indistinctly felt in Edinburgh and Glasgow. By all accounts, there has been no loss of lives, although considerable damage to property. The following is an extract of a letter from Inverness, dated August 14:—"Last night, exactly a quarter before eleven o'clock, the town of Inverness and the surrounding country was fearfully shook by an earthquake. We fled to the street, where we found almost every inhabitant; women and children screaming, and a very considerable portion of them naked. Many fled to the fields, and there remained for the greater part of the night. Chimney tops were thrown down or damaged in every quarter of the town. The Mason Lodge, occupied as an hotel, was rent from top to bottom, the north stalk of the chimney partly thrown down—one of the coping stones, weighing, I should think, from fifty to sixty pounds, was thrown to the other side of the street, a distance not less than sixty feet. The spire of the steeple, which I think one of the handsomest in Scotland, has been seriously injured, and must in part be taken down. The spire is an octagon; and within five or six feet of the top, the angles of the octagon are turned nearly to the middle of the square or flat side of the octagon, immediately under it. Notwithstanding the vast quantities of stones and bricks that have been thrown from such a height, not one person has received any hurt. I have only further to remark, that it was not attended with any of those phenomena that have been said to accompany earthquakes. The day had been beautiful and serene, and still continues so; no agitation or rising was observable in the river. It has been frequently observed, that in countries subject to these awful visitations, the mercury suddenly falls in the barometer: this I instantly attended to, but no alteration whatever took place."

See also a most circumstantial account of this earthquake, (certainly one of the most violent on record in this island,) communicated to Dr. Thomson, by Thomas Lauder Dick, Esq., in the Annals of Philosophy, vol. viii. p. 364, &c.

TABLE CXXII.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 8 mo. Aug. 16	Var.	29·84	29·59	29·47	29·37	65°	52°		—
17	NW	29·98	29·84	29·75	29·47	61	49		21
18	NW	30·15	29·98	30·00	29·75	62	51		—
19	NW	30·16	30·10	30·15	30·00	67	55		13
20	N	30·18	30·10	30·16	30·14	64	42		—
21	N	30·18	30·14	30·19	30·14	66	50		—
22	NW	30·14	30·10	30·15	30·10	68	53		
23	NW	30·10	30·10	30·14	30·10	66	56		—
24	NE	30·18	30·10	30·20	30·12	70	45		—
25	NE	30·20	30·18	30·21	30·19	69	44		
26	NE	30·18	30·15	30·20	30·14	67	47		
27	E	30·19	30·15	30·18	30·14	66	44		
28	E	30·19	30·17	30·20	30·18	70	46		
29	NW	30·17	29·95	30·17	29·86	64	52		
30	NW	29·95	29·36	29·86	29·06	61	53		23
31	SE	29·46	29·30	29·35	29·03	59	46		1·09
9 mo. Sept. 1	*N*	29·57	29·22	29·69	29·34	49	40		92
2	NW	29·67	29·57	29·77	29·69	55	30!		
3	SW	29·67	29·33	29·77	29·34	56	43		—
4	NW	29·49	29·31	29·65	29·34	57	37	66	—
5	W	29·86	29·49	29·97	29·65	60	40	73	18
6	SW	29·86	29·79	29·95	29·80	61	50	75	
7	W	29·79	29·77	29·87	29·83	67	52	62	
8	SW	29·77	29·65	29·83	29·70	65	47	52	
9	SW	29·48	29·38	29·70	29·40	60	54	77	55
10	SW	29·80	29·77	29·88	29·66	64	47	60	18
11	W	29·93	29·80	29·97	29·88	65	42	49	
12	SW	30·13	29·93	30·20	29·88	65	41	70	
13	*E*	30·13	29·99	30·20	30·08	65	55	70	—
		30·20	29·22	30·21	29·03	70	30		3·49

NOTES.—Eighth Mo. 19. Clear morning. 23. A little rain, evening. 24. Cloudy morning: smart shower at noon: a considerable appearance for thunder, evening. 25. *Stratus:* fine sunset. 26. Much dew, a. m.: cloudy. 28. Foggy morning: fair: *Stratus.* 29. Very foggy: fair. 30. Cloudy morning. 31. Wet morning: stormy night, with heavy rain.

Ninth Mo. 1. This was also a very wet day at *Paris.* 2. Hoar frost this morning: there is said to have been thick ice formed in several exposed situations. 3. Rain, with much wind in the night. 4. A hard shower of hail, followed by rain about noon. 5. Wet morning:

fair day after. 6. Cloudy a. m.: misty to the S: overcast day. 7. Maximum of temperature at 9 a. m.: fair day. 8. Fair: wind rising at SW in the evening, and *Nimbi* about. 9. It began to rain about 7 a. m. and continued till 3 p. m.: after which a very stormy night, the lower clouds moving much faster than the higher. 10. Fair day. 11. Much dew: fair: *Cirrocumulus* for two days past. 12. Much dew: fair. 13. Dew: misty a. m.: a few drops at midday, after much cloud and wind: the sky at sunset appeared to be clearing gradually.

RESULTS.

Winds Variable in the fore part, Westerly in the latter.

Barometer:	Greatest height .	30·20 in.	[By Clock 30·21 in.]
	Least . . .	29·22 in.	[.. 29·03 in.]
	Mean of the period	29·872 in.	[.. 29·860 in.]
Thermometer:	Greatest height .	70°	
	Least . . .	30°	
	Mean of the period	55·29°	
Rain	. . . .	3·49 in.	

The two preceding periods, with so much of the present as is comprehended in the Eighth Month, apply in point of local circumstance, to the site of the Laboratory, where the Observations were conducted by my friend and partner, John Gibson.

During a tour of nine weeks, in this interval, extending from Amsterdam to Geneva, I had ample occasion to witness the fact, that the excessive rains of this summer were not confined to our own islands, but took place over a great part of the continent of Europe. From the sources of the Rhine among the Alps, to its embouchure in the German ocean, and through a space twice or thrice as broad from east to west, the whole season presented a series of storms and inundations. Not meadows and villages alone, but portions of cities and large towns, lay long under water: dikes were broken, bridges blown up, the crops spoiled or carried off by torrents, and the vintage ruined by the want of sun to bring out and ripen the fruit.

While the middle of Europe was thus suffering from wet, the North for a time, and to a certain extent, was parched with drought, and public prayers appear to have been ordered, about the same time, at Dantzic and Riga for rain, and at Paris for sunshine! The probable natural causes of this unequal distribution may form a subject for discussion in another part of the work: it would in this place be premature. I have found the principal part of the evidence respecting it in numerous circumstantial accounts of the weather given in the public papers during the summer months.

TABLE CXXIII.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9mo. Sept. 14	SW	29·99	29·95	30·09	30·03	67°	48°	53	
15	S	29·96	29·93	30·06	30·02	72	46	56	
16	S	29·95	29·87	30·04	29·96	74	44	61	
17	E	29·85	29·78	29·96	29·87	72	48	70	
18	NE	30·02	29·78	30·07	29·90	70	47	72	—
19	NE	30·02	29·98	30·14	30·07	60	43	59	
20	E	29·98	29·64	30·08	29·75	62	40	53	
21	SE	29·60	29·57	29·75	29·62	60	50	62	
22	NE	29·74	29·60	29·80	29·75	66	48	63	
23	N	29·73	29·64	29·83	29·77	63	51	66	
24	S	29·97	29·73	30·17	29·75	61	51	72	·13
25	SE	30·09	29.97	30·17	30·00	67	42	59	
26	N	30·12	30·06	30·20	30·16	64	48	72	—
27	Var.	30·06	29·96	30·22	30·05	63	47	56	—
28	S	29·96	29·70	30·05	29·87	63	43	60	—
29	SW	29·65	29·32	29·87	29·34	60	39	80	·43
30	SW	29·65	29·42	29·75	29·65	60	47	65	—
10 mo. Oct. 1	SW	29·58	29·55	29·68	29·34	63	46	89	66
2	W	29·84	29·41	29·85	29·43	62	45	78	16
3	Var.	29·84	29·80	29·97	29·84	58	49	65	16
4	SW	29·82	29·80	29·91	29·84	66	53	85	—
5	W	29·82	29·78	29·90	29·81	66	52	77	
6	SE	29·78	29·74	29·86	29·80	68	56	71	·54
7	E	29·87	29·74	29·90	29·82	59	55	85	·27
8	E	29·95	29·87	30·05	29·90	66	54	80	
9	E	29·98	29·95	30·08	30·05	63	55	65	—
10	NW	29·95	29·92	30·08	29·98	65	51	64	
11	NE	30·06	29·92	30·16	29·98	60	44	69	—
12	*W*	30·06	30·04	30·16	30·13	57	47	73	—
13	*SW*	30·04	30·03	30·13	30·08	55	39	65	
		30·12	29·32	30·22	29·34	74	39	68	2·35

NOTES.—Ninth Mo. 14. The sky overcast, with numerous beds of *Cirrocumulus*, which at sunset changed to *Cirrostratus*, and became red. 15. An electrical smell a. m.: much dew: there appears to have been a *Stratus* in the night: serene day. 16. Much dew: large plumose *Cirri:* very fine. 17. Much dew: misty: fine day: in the evening a solitary *Cumulus* cloud in the W, spired up to inosculate with a *Cirrostratus* above it, a *Stratus* at the same time appearing in the meadows nearer to us: several discharges of lightning in the NW followed these appearances: the barometer, which had fallen a little, now rising. 18. Overcast day: a little rain perceptible in the evening.

19. Fair, with a grey sky, and a few distinct *Cirrostrati* beneath. 20. Grey sky a. m.: then sunshine, with a breeze. 21. Cloudy a. m.: some dripping at midday: fair evening. 22. Cloudy, in different modifications. 24. Showers: breeze at SE, evening: misty air. 25. Misty to S: fair with *Cumulus* beneath *Cirrocumulus:* a *Stratus* at night. 26. Various modifications of cloud: some rain in the night. 27. *Cumulus* beneath *Cirrocumulus.* 28. Cloudy morning, the wind increasing from the westward: rain midday: fair evening. 29. Wet morning: much wind at S till evening: stormy night. 30. Fair, with *Cirrostratus:* much wind in the night.

Tenth Mo. 1. Wet morning: much wind: lunar halo at night. 2. A plentiful dew: cloudy afterwards, with much wind: drizzling rain at intervals. 3. Cloudy a. m.: wind N: drizzling: in the night easterly, with misty air. 4. Overcast: small rain. 5. Fair. 6. Misty morning: much dew: *Cirrocumulus* in the superior stratum, as for some days past at intervals: rain p. m. and night. 7. At twenty minutes before one this morning a loud explosion of electricity, *which kept the ground in a sensible tremor for several seconds:* it was followed by thunder in long peals, and vivid lightning to the south and east for above an hour: also by much wind and rain: the day was cloudy and drizzling after. 8. Fair: mostly cloudy: *Stratus.* 9. Cloudy: breeze at E: large *Cirri:* a few drops of rain: a well-formed mushroom was brought me, which measured twelve inches over the crown, and weighed twenty ounces. 10. *Cirrocumulus* above *Cumulus:* calm. 11. Fair, save a few drops. 12. Cloudy. 13. Cloudy: breeze.

RESULTS.

Winds Variable.

Barometer:	Greatest height .	30·12 in.	[By Clock 30·22 in.]
	Least . . .	29·32 in.	[.. 29·34 in.]
	Mean of the period	29·840 in.	[.. 29·924 in.]
Thermometer:	Greatest height .	74°	
	Least . . .	39°	
	Mean of the period	55·9°	[Lab^{y}· 56·73°]
Mean of the hygrometer at 9 a. m.		68°	
Rain		2·35 in.	

Extract of a letter from Lloyd's Agent at Gottenburgh, dated the 2nd Oct.—"On the 30th ult. at daylight, it came on to blow heavy at WSW; at nine it veered to the W, and blew a tremendous hurricane, which continued till almost 4. p. m. yesterday, when it moderated a little, but still blew a gale from the WNW. At five this morning it abated, and now blows only a fresh breeze."

TABLE CXXIV.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 10 mo. Oct. 14	SE	30·13	30·03	30·20	30·13	60°	38°	88	
15	SE	30·13	29·99	30 20	30·04	57	41	82	
16	SE	29·99	29·71	30·04	29·75	58	34	90	—
17	Var.	29·72	29·69	29·77	29·70	52	35	93	12
18	NW	29·85	29·72	29·96	29·77	53	30	77	
19	NW	29·85	29·56	29·90	29·55	56	41	78	17
20	W	29·58	29·52	29·62	29·54	50	39	60	
21	Var.	29·63	29·61	29·70	29·62	49	40	55	—
22	NW	29·89	29·63	30·00	29·63	54	30	86	5
23	Var.	29·92	29·74	30·00	29 78	46	30	80	
24	S	29·74	29·41	29·78	29·40	52	34	65	10
25	SE	29·53	29·30	29·60	29·26	54	29	95	44
26	SE	29·62	29·59	29·67	29·60	53	37	95	
27	E	29·59	29·57	29·63	29·58	58	46	67	
28	E	29·55	29·51	29·60	29·55	58	38	72	
29	SE	29·51	29·15	29·60	29·15	56	42	88	—
30	SE	29·16	29·09	29·17	29·07	57	42	90	37
31	S	29·25	29·16	29·27	29·17	55	39	83	19
11th mo. Nov. 1	Var.	29·32	29·25	29·36	29·27	53	32	95	—
2	S	29·22	29·17	29·30	29·20	47	35	94	81
3	SW	29·63	29·22	29·65	29·30	48	36	85	11
4	NE	29·63	29·62	29·70	29·65	51	44	86	19
5	SE	29·62	29·36	29·65	29·36	53	40	85	11
6	Var.	29·33	29·29	29·36	29·30	50	36	90	—
7	N	29·45	29·29	29·51	29·30	41	20		—
8	SW	29·45	28·87	29·51	28·80	43	24	90	34
9	SW	29·30	28·72	29·40	28·69	47	34	83	—
10	NW	29·70	29·30	29·76	29·40	34	20	66	—
11	Var.	29·23	29·03	29·76	29·00	44	26	73	54
		30·13	28·72	30·20	28·69	60	20	81	3·54

NOTES.—Tenth Mo. 14. Much dew these two mornings past: gossamer. 15. Dew: somewhat misty air, with an electric odour: sunshine. 16. Misty: the trees dripping: calm: then sunshine, with a breeze at SE, and *Cumuli*, &c. 17. Morning overcast: rain by nine: rainbow: drips at intervals fair 18. Fair: a fine breeze through the day: twilight pale orange, with *Cirrostratus*. 19. Wind and rain in the night. 20. Cloudy day. 21. Obscurity to the S, indicating rain there: after dark, a flash of lightning to the SE, with a small meteor. 22. Rain a. m., succeeded by a fair day and night. 23. Hoar frost: clear a. m.: a fine day. 24. Cloudy: windy at S: wet evening:

clear night. 25. Cloudy: windy at SE: very wet, p. m. 26. Misty morning: fair day. 27. Various clouds: fair. 28. Overcast, with *Cirrostratus:* clear night. 29. Very heavy dew: misty at night, with a *Nimbus* to the SW. 30. Rainy. 31. Misty: close, electric air: rain, p. m. and evening.

Eleventh Mo. 1. Misty a. m.: *Cumulostratus, Nimbus:* a little rain. 2. Misty morning: much rain this day and night: hail. 3. Misty a. m.: fair day: wet evening. 5. *Cumulostratus:* small rain. 6. *Nimbi,* with other clouds. 7. Snow this morning in the high lands: shower, with hail: snow again at night. 8. Very white frost: much smoke and cloud accumulated over the city: cloudy evening: in the night the temperature, which had not passed 33° in the day, advanced to 43°, with much wind and rain from the southward. 9. Fair morning: squally, p. m.: after dark a small meteor and lightning to the S, in which direction *Nimbi* were visible at sunset. 10. Snowy morning: clear day: the hygrometer receded to 45°. 11. Clear, a. m.: wind NW: the ground crusted over with some snow, which fell last night: a bank of clouds in the SW, and some attenuated *Cirrostrati* aloft: at night rain: the wind violent at SW.

RESULTS.

Prevailing Winds SE and NW.

Barometer:	Greatest height .	30·13 in.	[By Clock 30·20 in.]
	Least . . .	28·72 in.	[.. 28·69 in.]
	Mean of the period	29·512 in.	[.. 29·555 in.]
Thermometer:	Greatest height .	60°	
	Least . . .	20°	
	Mean of the period	43·19°	
Mean of the hygrometer at 9 a. m.		81°	
Rain		3·54 in.	

The barometer has been throughout unsteady, and its oscillations towards the end considerable, chiefly in depression. Eight days only were without rain.

The city of *Chester* on Wednesday (November 6) at noon, was enveloped in darkness; candles or lamps were obliged to be lighted in all the houses; this was succeeded by a slight shower. On Thursday successive falls of hail and rain took place; on Friday the frost was uncommonly severe, and on Sunday the snow which fell was above two feet deep in the streets.

An article from *Rochelle*, of the 14th November, states, that a tempest occurred on the French coast, in the night of the 11th—12th, which occasioned many shipwrecks. Wind first N, then SSE.—(Papers.)

TABLE CXXV.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q.11mo.Nov.12	NW	29·70	29·23	29·74	29·25	52°	38°	69	1
13	W	29·68	29·64	29·77	29·67	56	39	75	
14	W	29·64	29·44	29·68	29·40	45	27	63	
15	NW	29·73	29·44	29·80	29·40	37	28	67	
16	NW	30·04	29·73	30·10	29·80	38	28	65	
17	SW	30·04	29·68	30·10	29·70	43	28	70	
18	SW	29·75	29·68	29·80	29·60	47	32	90	7
19	SW	29·93	29·75	30·00	29·80	46	39	93	
20	S	30·00	29·97	30·06	30·00	51	37	95	
21	SE	29·97	29·78	30·00	29·80	44	29	76	
22	E	29·78	29·75	29·80	29·69	38	26	68	
23	NE	29·89	29·74	29·93	29·77	33	17	67	
24	NW	29·93	29·89	29·97	29·92	30	18	82	
25	SE	29·93	29·88	29·94	29·86	40	25	90	—
26	N	30·22	29·93	30·28	29·90	42	30	98	41
27	W	30·30	30·22	30·35	30·28	45	32	96	
28	NW	30·43	30·30	30·49	30·34	44	32	80	
29	N	30·56	30·43	30·60	30·49	44	30	98	
30	N	30·62	30·56	30·65	30·60	38	30	77	
12th mo. Dec. 1	NW	30·62	30·40	30·65	30·42	36	25	78	
2	W	30·35	30·33	30·42	30·37	38	28	73	
3	E	30·35	30·32	30·40	30·36	40	32	92	
4	E	30·32	30·08	30·37	30·06	42	36	91	
5	SE	29·52	29·45	30·06	29·43	43	36	80	11
6	SW	29·45	29·35	29·55	29·25	40	29	68	21
7	SW	29·52	29·47	29·60	29·48	39	27	75	18
8	SW	29·69	29·52	29·75	29·50	37	25	95	—
9	W	29·55	29·46	29·60	29·45	42	27	95	17
10	Var.	29·25	29·20	29·60	29·20	46	35	88	13
11	NW	29·36	29·25	29·47	29·25	40	27	77	
		30·62	29·20	30·65	29·20	56	17	81	1·29

NOTES.—Eleventh Mo. 12. Windy. 13. Strong breeze: sunshine: much water out in the marshes. 14, 15. Breezy: sun and clouds. 16. Slight hoar frost. 17. *Cirrostrati* at a great elevation, in which a solar halo appeared for an hour or two, a. m. 18. *Maximum* temperature at 9 a. m.: windy: overcast: dripping forenoon. 19. The diurnal temperature disturbed by the solar eclipse (of which see the particulars in the Note.) 20. Fair at 2 p. m.: *Cumulostrati* formed rapidly, and passed off at a great elevation, the wind veering S. 21. Fair: rather windy. 22. Cloudy a. m.: steady breeze: p. m. *Cumuli.* 23. Cloudy: steady breeze. 24. A serene sky. 25. Hoar frost for the third morning: overcast, with *Cirrostratus* and haze: rain at night. 26. Very misty a. m.: *Cirrostratus* sweeps the ground: rain. 27. Much *Cirrostratus,* especially to the N, of delicate texture: fair day. 28. The sky was so completely shrouded in a *Cirrostratus,* without the smallest opening to admit the sun's rays, that from nine to three the temperature did not ascend 2°: at sunset the sky cleared pretty suddenly, showing red *Cirri* above for a considerable time: the lower air, which had been transparent, now filled with mist. 29. Misty a. m.: calm: very bright sun at midday: lunar halo. 30. Hoar frost: breeze: very fine day.

Twelfth Mo. 1. Cloudy morning. 2. Lightly clouded. 3. Misty by *Cirrostratus,* soon after sunrise, during which a hoar frost formed: grey lofty sky. 4. Grey: little wind. 5. Idem: the lunar eclipse not visible for clouds: much wind, with rain after. 6. Fine. 7. Very fine day: but stormy at night. 8. Rain, the middle of the day: clear night. 9. Very white frost a. m., and rime on the shrubs: *Cirrostratus* floating at an elevation of two or three yards: the temperature rose quickly, and it rained, p. m. and night. 10. Fine day, with *Cirrus* and *Cirrostratus:* wet and stormy fore part of night. 11. Fair: at sunset a lofty and wide-spread *Nimbus* in the NW at 10 p. m.: a bright shooting star to the W: some large flakes of moist snow in the night.

RESULTS.

Winds Variable and moderate till after the Full Moon.

Barometer:	Greatest height .	30·62 in.	[By Clock 30·65 in.]
	Least . . .	29·20 in.	[.. 29·20 in.]
	Mean of the period	29·866 in.	[.. 30·075 in.]
Thermometer:	Greatest height .	56°	
	Least . . .	17°	
	Mean of the period .	35·80°	[Lab$^{y.}$ 38·22°]
Mean of the hygrometer .		81°	
Rain		1·29 in.	

The rain fell at three distinct intervals, and chiefly by night, increasing greatly each time in quantity and continuance.

The atmosphere was so darkened yesterday morning in the vicinity of the metropolis by the thick fog, combined with smoke, that in some parts it appeared like a cloudy night. In the neighbourhood of Walworth and Camberwell it was so completely dark, that some of the coachmen driving stages were obliged to get down and lead their horses with a lantern.

(Evening Mail, *November* 27.)

The Inverness Journal, of November 17, says—"The winter has commenced with a severity almost beyond example: frost, rain, and snow have been almost incessant during the last week; and the greater proportion of corn, still uncut or in stooks, has suffered material injury. We regret to say, that several lives have been lost. A postboy of Bennet's coming from the south, was obliged to leave his chaise on the road, and would have been lost but for the lights shown from the windows of Moyall, which he reached nearly in a frozen state. *The obvious advantage of keeping lights, in stormy nights, in the windows of houses in the country, has thus been illustrated.*"

The winter, it appears, has set in with extreme severity in the interior of the Continent. At Augsburg, on the 19th of November, the eclipse of the sun was entirely obscured by a fall of snow, which commenced at seven o'clock in the morning, and lasted till noon. The ground was covered with snow a foot in depth. There was a great fall of snow at Frankfort on the same day, and Reaumur's thermometer showed at from nine to ten degrees below the freezing point.

METEOR.

The meteor lately seen at Glasgow, was also visible at Perth. It made its appearance in the SW, in the form of a small star, and gradually increased in magnitude till it reached the zenith, when it subtended an angle nearly equal to that of the full moon. In shape it resembled a paper kite. After passing the zenith, it again seemed to diminish in size, owing, no doubt to its gradually receding from the observer, till its altitude was equal to about 30°, when it exploded like a sky-rocket. The report of the explosion reached the ear about three minutes after the meteor vanished, so that it could not be less than forty miles distant, and probably about twenty-seven miles above the surface of the earth. From the various particulars collected concerning it, its diameter must have been about two hundred and forty yards. The light which it yielded was very considerable, being sufficient to render the smallest objects visible.—(PUB. LEDGER, *December* 12.)

Influence of a Solar Eclipse on the Diurnal Temperature.

The radiation from the sun is so manifestly the cause of a diurnal elevation of temperature on the earth, that in a considerable eclipse of that luminary we ought to expect some diminution for the time, as well of its heating, as of its illuminating effect; but I do not know that any one has yet submitted this consequence to the test of observation by the thermometer. In determining to do this, I thought it right to have a proximate standard wherewith to compare the results I might obtain; and, therefore, although the day was by no means so favourable for the purpose as some preceding clear ones, I caused a number of observations to be taken of the progress of the diurnal temperature on the 18th of the Eleventh month; and devoted the forenoon of the 19th, on which the eclipse of the sun took place, to a similar investigation by myself.

It will not be necessary very minutely to detail the observations of the 18th, which, as well as those during the eclipse, were made with the Six's thermometer, which I constantly use. At 6 a. m. the thermometer stood at 40°, the sky being overcast with *Cirrostratus* clouds pretty close and dense, and a steady breeze blowing from SSW. At 6^h 45^m, and for half an hour after, the temperature did not exceed 41°. At 7^h 45^m the sun being up, it was 42°; and from this time to 11^h it advanced (with some interruption, but no depression intervening) to 47°. In the interval before noon occurred a depression of *half a degree,* which being over, the temperature attained its maximum for the day, of 47·5°, at half-past twelve. During the time there fell about 0·07 inch of rain. The afternoon was fair, the temperature descended more rapidly than it had risen, and in the fore part of the night (as it appears) touched upon 32°.

A. M. *Eleventh Month* 19. *Day of the Eclipse.*

h. m. Ther.

6 30 — 35° Temperature going down, having risen some degrees in the night: dawn of day perceptible: light *Cirrostratus* clouds, with a gentle breeze at SW. Barometer 29·68 in.

7 0 — 34·5 Day breaks. Barometer 29·69 in.

7 20 — 34 Breeze increasing: a veil of clouds above, passing off with a definite edge to the NE, but leaving detached streaks below.

7 42 — 33 Barometer 29·72 in. Sun not yet visible, being hid by a low mist.

8 0 — 34 The sun has been some time shining: but is now among thin streaks of cloud.

8 20 — 35 The sun among streaks of cloud, the disk scarcely visible; so that the commencement of the eclipse was not observed.

8 45 — 36 The sun still behind a light screen of *Cirrostratus,* through the interstices of which the disk is at times distinctly seen eclipsed. The thermometer now ceases to rise.

8 55 — The temperature now begins to decline, although there is less cloud than heretofore.

9 0 — 35·5 Barometer 29·75 in.: but hesitating, as if it would fall.

9 15 — 35 A somewhat thicker bed of cloud now coming over the sun, increases the obscurity of the eclipse, which is yet not very considerable. There is perhaps as much *light* as when the sun was 20 min. high.

9 20 — The thermometer now tends to rise again.

h.	m.	Ther.	
A. M.			
9	30	35·5°	Barometer 29·77 in. Cloudiness, by *Cirrostratus*, becoming general.
9	45	37	Eclipse visibly going off.
10	0	38	
10	15	39	The clouds again lighter.
10	30	40	Near the termination of the eclipse.
10	50	41	Barometer stationary: wind more to the W: the clouds thicken again.
11	5	42	
11	40	43	The clouds tend to form *Cumulostratus*.
P. M.			
12	20	45	Barometer rising.
1	30	45	In this interval the temperature has fallen half a degree, and risen again: as it did yesterday an hour earlier.
2	0	46	Temperature the same at this hour yesterday: cloudy.
3	0	46	Idem.
4	0	44	Barometer 29·80. No rain or strong wind has occurred during the observations.

The foregoing observations, I presume, will be found satisfactory. The temperature on this day was falling (as is commonly the case) before sunrise; presently after which it began to rise. This effect continued until a considerable portion of the sun's rays became intercepted, when it fell again, to near the middle of the eclipse, (by my watch, which had not been adjusted,) and in proportion as the latter went off, resumed its former movement, rose steadily, and attained its maximum at nearly the same degree as the day before, though later in the afternoon. Had the elevation proceeded from $8^h 45^m$ to $9^h 15^m$, at the rate which it had assumed previous to this interval, the temperature at 9^h 15^m, instead of 35°, would have been 38°, and the progress of the diurnal elevation would have been still more uniform than the day before; which was to be expected from the greater uniformity of the sky. Now, as the depression coincides sufficiently with the time of the sun's being under eclipse, and as no other disturbing cause is apparent, we may conclude that there resulted from this cause an interruption to the diurnal accumulation of heat at the place of observation, the amount of which, at six or eight feet from the surface, vas equal to 3° of Fahrenheit's thermometer.

Since these Observations were published, (in the Annals of Philohy,) I have met with the following passage, in an " Observation of the Solar Eclipse, April 1, 1764, by Dr. John Bevis." Philosophical Transactions, abridged, vol. xii. p. 113. "A full digit of the sun, or more, remained uneclipsed. The daylight was but inconsiderably diminished.—Fahrenheit's thermometer, placed without door to the north, stood at 50° when the eclipse began, *and fell but one division while it lasted.*"

Thus it appears that the thermometer has been heretofore resorted to on this occasion, and with a result which agrees very well with the present; the *depression* in our own case being *but one degree,* and the digits eclipsed nine.

In an *annular* eclipse of the sun observed at Edinburgh, by Colin Maclaurin, the middle of the time being about half-past 3 p. m., February 18, 1736–7, the observer remarks, "It was *very cold* at this time; a little thin *snow fell,* and some small pools of water in the college area, where there was no ice at two o'clock, *were frozen* at four.—Some curious gentlemen found that a common burning-glass, which kindled tinder at 3^h 59^m, and burned cloth at 4^h 8^m, had no effect during the annular appearance, and for some time before and after it." Idem viii. 171.

The moon on this occasion was scarcely to be discerned on the middle of the sun's disc, without the help of a dark glass: and with glasses it appeared much smaller than it should have done, their respective apparent diameters considered. The moon therefore stops fewer of the sun's rays than previous theory would suggest: or it collects and sends forward into the shadow a portion of those which would otherwise be tangents to its orb. And in proportion as the illumination thus passes by the obstacle, so must the heat likewise. We want still the observations on a delicate thermometer during a *total* eclipse, to enable us to ascertain fully the power of the moon to intercept our heat.

It is somewhat curious, that in the observations of the Lunar period to which these notes are annexed, we have occasion to see, on two nearly successive days, the still greater effect of a complete screen of cloud in stopping heat, (Eleventh Month, 28, *Note,*) and of the smoke of the city in bringing on darkness.—See the note under the Results.

TABLE CXXVI.

1816.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 12mo. Dec. 12	SW	29·00	28·65	29·30	28·58	47°	32°	95	40
13	NW	29·35	29·00	29·40	29·00	43	28	70	—
14	SW	28·82	28·53	29·41	28·53	47	33	76	52
15	W	29·38	28·82	29·41	28·80	41	29	65	
16	Var.	29·49	29·31	29·52	29·22	38	32	81	—
17	Var.	29·28	29·22	29·30	29·20	49	35	97	20
18	N	30·09	29·28	30·20	29·30	44	33	92	—
19	N	30·47	30·09	30·52	30·20	36	25	70	—
20	NE	30·47	30·35	30·53	30·35	32	22	74	
21	N	30·35	30·07	30·35	30·03	28	14	85	
22	Var.	30·15	30·00	30·15	29·90	31	17	75	
23	SW	30·00	29·66	29·90	29·63	46	32	93	10
24	W	29·72	29·53	29·63	29·57	48	33	83	
25	*S*	29·72	29·38	29·76	29·41	48	35		
26	*S*	29·42	29·27	29·42	29·29	50	33		37
27	NW	29·78	29·42	29·80	29·35	43	27	90	—
28	SW	29·40	29·30	29·80	29·18	49	32	90	18
29	W	29·91	29·40	29·96	29·85	42	34	64	—
30	SE	29·67	29·62	29·94	29·61	44	37	83	1·08
31	SW	29·67	29·51	29·70	29·50	48	39	99	9
1817, 1 mo. Jan. 1	S	29·35	29·30	29·50	29·25	48	36	88	35
2	SW	29·49	29·45	29·52	29·32	44	32	90	72
3	S	29·63	29·20	29·66	29·30	48	31	94	—
4	W	29·73	29·12	29·76	29·11	52	36	87	76
5	W	29·73	29·52	29·82	29·60	44	32	72	70
6	SW	30·25	29·52	30·20	29·40	45	33	80	14
7	NW	30·42	30·25	30·44	30·20	38	22	65	
8	N	30·53	30·43	30·56	30·40	30	26	90	
9	E	30·58	30·53	30·57	30·53	30	21	82	
		30·58	28·53	30·57	28·53	52	14	83	5·61

NOTE.—Twelfth Mo. 12. A wet day after a frosty night: the fore part of this night a violent storm of wind from the westward, the barometer rising fast. 13. Calm a. m. with a turbid sky: about noon a clap of thunder followed by some heavy sweeping hail. 14. The day fine, with *Cirrus* after dark, the sky being suddenly overcast, the wind rose to an excessive degree of violence, with rain: the barometer had since noon rapidly the minimum (which is also the lowest ıe year) occurred very early in the morning of 15. *During the night I was twice sensible of a tremor of the earth, 'he effects of the wind, and lasting perhaps a quarter of* I incline to attribute to the shock of electrical discharges, as I found it had thundered twice about the time. 15. A gale a. m., with clouds: the day fine, and windy afterwards. 16. Hoar frost: fair, with *Cirrostratus:* at night a small meteor moving eastward. 17. Wet a. m.: the wind SE. 18. The wind passed by W to N, and gradually rose to a moderate gale: a few drops about noon. 19. Wind inclining to NE, a stiff breeze: snow p. m., part of which lay on the ground. 20. A brilliant evening twilight, which was reflected by a haze in the eastern sky. 22. Clear, save a little *Cirrostratus:* wind gentle and variable. 23. Wind rising a. m., the air turbid: sleet and rain followed, with a windy night. 25. Very fine day, the barometer nearly quiescent at 29·72 till evening: at night the wind rose, and was boisterous till the morning. 26. Much rain, in squalls, p. m.: a lunar corona at night. 27. *Nimbi:* the sun set fiery red, and much enlarged: windy. 28. Hoar frost: fair day: night very tempestuous, with rain from the southward, which began, with the rise of the barometer, at 10 p. m. 29. Wind, followed by *Cirrocumulus*, and a calm night. 30. A very wet day and night. 31. Misty: little wind.

1817. First Mo. 1. Windy: wet p. m. 2. Fair: at 5 p. m. hygrometer 65°, and the moon yellow: notwithstanding these indications, there fell much rain and snow after it in the night. 3. Fair day, save a slight shower: the night (after bright moonlight) very stormy, with rain. 4. Small driving rain: at night another gale of wind. 5—7. Much the same alternations as for several preceding days. 8. Very white rime: misty about noon: *Cirrostratus.* 9. The wind has now gained the E, having gradually shifted round by N: hoar frost: misty air.

RESULTS.

Barometer:	Greatest height .	30·58 in.	[By Clock 30·57 in.]
	Least . . .	28·53 in.	[.. 28·53 in.]
	Mean of the period	29·649 in.	[.. 29·70 in.]
Thermometer:	Greatest height .	52°	
	Least . . .	14°	
	Mean of the period	36·10°	[Lab^{y}· 27d. 35·62°]
Mean of the hygrometer .		83 in.	
Rain		5·61 in.	

The wind, though chiefly westerly, has been very variable in direction, and equally so in force; presenting a succession of heavy gales, with intervals of frost and rain. This enormous quantity of rain, being *twice* as much as usually constitutes a *wet moon* in this part of the island, had the usual effect of inundating the low lands to a great extent, especially when met by the spring tide after the full. By a mark preserved at the Laboratory, however, I find that in the inundation of 1809, the river Lea rose fifteen inches higher than on the present occasion.

HAMBURGH, *December* 13.—It has blown a hurricane here the whole of this day.

December 15.—A dreadful storm of wind and rain raged during the whole of last night in *Paris*, and did considerable damage.

January 2, 1817.—The accounts from Holland, of the effects of the weather, are deplorable: the winter season seems to have set in with heavy rains, and in consequence almost all the rivers and canals have overflowed their banks.

(PAPERS.)

SOOT ON SNOW.

I have observed, that the flakes of soot which are deposited on the surface of snow, and remain there exposed to the sun's rays, disappear after some hours, leaving a cavity, the bottom of which is visible and clean. There is therefore probably a real oxidation of the carbon, after which it is dissolved in the water, in the way in which the colouring matter of cloth is destroyed in bleaching.

LEECHES UNHURT BY FROST.

Among the cold-blooded animals which resist the effects of a low temperature, we may reckon the common leech; which is otherwise interesting to the meteorologist, on account of its peculiar habits and movements under different states of the atmosphere. A group of these animals, which I left accidentally in a closet without a fire, during the frost of 1816, not only survived, but appeared to suffer no injury from being locked up in a mass of ice for many days.

Meteorological Observations,

MADE AT

TOTTENHAM, NEAR LONDON,

IN THE YEARS

1817, 1818, 1819.

(First published Monthly in Thomson's Annals of Philosophy.)

TABLE CXXVII.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 1 mo. Jan. 10	Var.	30·58	30·40	30·57	30·40	30°	20°	82	
11	E	30·40	30·11	30·42	30·12	33	25	95	
12	SW	30·11	29·73	30·12	29·74	37	32		
13	S	29·73	29·47	29·74	29·47	38	32		5
14	Var.	29·47	28·90	29·53	29·10	39	27		—
15	Var.	29·31	28·75	29·37	28·70	33	19		—
16	SW	29·31	28·83	29·35	28·76	39	24		98
17		29·00	28·83	28·93	28·76	42	37		7
18	S	29·03	28·99	29·02	28·93	45	37		
19	S	28·99	28·79	28·98	28·69	45	41	58	7
20	SW	29·42	28·79	29·35	28·70	45	31	66	—
21	SW	29·81	29·71	29·87	29·35	44	31	77	—
22	SW	29·80	29·79	29·85	29·70	48	44	80	9
23	SW	30·12	29·80	30·10	29·76	52	45	78	—
24	SW	30·25	30·12	30·30	30·10	50	45	87	—
25	SW	30·25	30·16	30·30	30·22	52	45	78	—
26	SW	30·26	30·10	30·27	30·15	46	39	76	
27	Var.	30·38	30·31	30·43	30·27	50	39	92	6
28	E	30·25	30·22	30·37	30·26	43	40	70	—
29	Var.	30·29	30·24	30·35	30·26	47	37	75	—
30	N	30·37	30·20	30·40	30·25	51	40	96	
31	NW	30·46	30·33	30·50	30·40	52	32	80	
2 mo. Feb. 1	NW	30·44	30·41	30·52	30·48	49	34	75	
2	W	30·41	30·27	30·49	30·32	45	37	92	
3	SW	30·27	29·95	30·32	30·00	41	38	70	
4	SW	29·69	29·50	30·00	29·52	43	35	57	2
5	NW	29·90	29·69	29·97	29·60	50	38	73	4
6	W	30·09	29·90	30·10	29·95	54	40	62	
7	W	30·21	30·09	30·25	30·10	51	42	63	
		30·58	28·79	30·57	28·69	54	19	76	1·38

NOTES.—First Mo. 10. Fair: hoar frost: misty. 11. Much rime: very red *Cirrostrati* at sun-rise: in the course of the day the rime mostly came off the trees, with a SW wind. 12. Grey lofty sky: *Cirrocumulus* p. m. 13. Misty: some rain after dark. 14. Clear, a. m. with *Cirrostratus* to S: from whence afterwards came on cloudiness. 15. A considerable fall of snow from SE, followed by sleet: snow at intervals, with a moderate breeze: clear frost at night. 16. Misty, gloomy, a. m. the wind very light, S: then a steady breeze, SW, and decided thaw, with much sleet and rain: the product of the rain-guage is that of the guage at the laboratory, my own having been accidentally overfilled. 17. The wind, for the first time in this period, blew a moderate gale in the night. 18. Fair day: somewhat windy night. 19. Fair: the wind E, with a lofty overcast sky, and much *scud:* at noon an electric-looking compound state of the clouds: after dark, rain from the southward, and a hard gale by morning. 20. Fine day: rain after dark: windy night. 21. Very fine day: a stiff breeze, with summer-like clouds in a blue sky: *Cirrostratus* at sun-set, and a lunar corona: windy night, and a dash of rain towards morning. 22. Drizzling at intervals: a gale at night. 23. Windy: a little rain, p. m.: at night a moderate gale. 24. *Cirrocumuli,* a. m. well formed from plumose *Cirri:* afterwards a pretty sudden obscuration, and some dripping. 25. Overcast: misty: a very little rain. 26. Ten minutes' sun about noon: the blackbird and robin sing much. 27. Misty and cloudy, as heretofore: at night the wind E, with moonlight and flying clouds. 28. a. m. Small rain: gloomy. 29. *Cumulostratus:* some sun at mid-day: at night wind N, with a veil of *Cirrostratus.* 31. Misty morning, followed by a very fine day, with *Cirrus* and *Cirrocumulus:* the hygrometer receded [from 80°] to 52°.

Second Mo. 1. Hoar frost: a fine day with a gradation of clouds from *Cirrus* to *Cumulostratus,* ending in an overcast sky. 2. Grey sky. 3. Misty: cloudy. 4. *Cumulus* and sunshine: at evening, thick to the SW: the wind rose to a moderate gale, with a shower. 5. a. m. High wind and clouds: dripping at night. 6. *Cirrostratus:* windy. 7. A fine sky of *Cirrocumulus:* windy, especially at night. The surface is considerably dried of late, and the roads tend to be dusty.

RESULTS.

Winds, with little exception, westerly: from the new moon to the first quarter, a SW wind, which was uniformly moderate by day, and increased in force in the night.

Barometer:	Greatest height .	30·58 in.	[By Clock 30·57 in.]
	Least . . .	28·79 in.	[.. 28·69 in.]
	Mean of the period	29·846 in.	[.. 29·894 in.]
Thermometer:	Greatest height .	54°	
	Least . . .	19°	
	Mean of the period	40·03°	[Lab$^{y.}$ 41·10°]
Mean of the hygrometer	.	76°	
Rain	.	1·38 in.	[Lab$^{y.}$ 1·48 in.]

The hygrometer having undergone some repair, was exposed (after adjustment) for twenty-four hours before the observation of the 19th, which is probably, therefore, accurate. It appears that on this day there was a tremendous gale on the coasts of Devon and Cornwall, which did much damage, particularly at Plymouth.

Paris, Jan. 23.—A storm of wind and rain was experienced on the 15th inst. at Niort, which did great damage to the surrounding country.

On the 29th of January a mist prevailed at Naples, so dense as to produce a darkness of several hours. This is a rare occurrence in that delicious clime.—Papers.)

TABLE CXXVIII.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 2 mo. Feb. 8	NW	30·27	30·21	30·27	30·18	50°	43°	60	1
9	NW	30·29	30·10	30·32	30·12	51	39	61	
10	Var.	30·10	29·80	30·12	29·74	50	33	77	—
11	Var.	30·00	29·38	30·05	29·50	41	28	63	34
12	NW	29·77	29·38	29·84	29·36	46	33	88	7
13	SW	29·45	29·40	29·80	29·38	53	38	60	
14	SW	29.75	29·43	29·80	29·40	53	35	83	42
15	NW	29·66	29·43	29·60	29·40	50	35	53	3
16	SW	29·90	29·66	29·93	29·60	47	32	79	—
17	SW	30·02	29·90	30·05	29·90	55	45	73	—
18	NW	30·09	30·02	30·10	29·93	54	34		3
19	SW	30·15	29·75	30·21	29·80	46	38	63	—
20	SW	29·50	29·38	29·80	29·33	48	33	63	6
21	SW	29·58	29·36	29·53	29·37	44	34	60	—
22	NW	29·90	29·58	29·96	29·53	47	33	65	
23	W	29·79	29·68	29·95	29·54	49	39	53	4
24	NW	29·95	29·79	30·00	29·74	48	38	63	
25	W	29·69	29·62	30·00	29·60	51	40	62	11
26	W	29·81	29·54	29·85	29·50	47	40	70	10
27	NW	29·79	29·54	29·85	29·50	50	39	59	3
28	SW	29·76	29·67	29·82	29·70	54	43	62	—
3 mo. March 1	W	29·68	29·47	29·69	29·50	53	32	58	
2	SW	29·38	29·18	29·70	29·14	49	35	60	14
3	SW	29·14	28·84	29·37	28·77	50	36	59	50
4	NW	29·24	29·14	29·20	29·10	45	30	60	—
5	W	29·24	28·78	29·30	28·90	47	34	65	25
6	W	29·22	28·78	29·15	28·70	43	28	62	
7	W	29·10	28·98	29·30	28·95	46	34	63	—
8	NW	29·40	29·10	29·34	28·95	43	28	60	55
9	NW	29·91	29·40	29·87	28·94	45	29	61	—
		30·29	28·78	30·32	28·70	55	28	64	2·68

Notes.—Second Mo. 8. The light of an Aurora Borealis was very perceptible about ten, p. m. through the clouds which overspread the sky to the N: a windy night, with a little rain, followed. 9. Calm: grey sky, with the lighter modifications: at sun-set the clouds exhibited a splendid set of tints. Close to the horizon was a clear space, lemon-coloured; above this, crimson lights, with shadows of grey and purple, in a variety of figures, streaked, waved, and clustered; of those in the E some were rose-red, others a tender green: a windy night ensued. 10. Fair: roads dusty. 11. Snow, a. m. with a gale at NE: in the night a southerly gale, with rain. 12. Showers. 13. Misty: small rain: windy. 14. a. m. *Cirrostratus:* gloomy: fair day, with clouds: windy night, with rain. 15. Windy night. 16. Windy: *Cumulus* beneath linear *Cirrus,* passing to *Cirrostratus.* 17. Cloudy: some rain morning and evening. 18. Dripping at intervals: windy. 19. a. m. calm: the dew drops frozen clear on the grass: a very fine day ensued, with *Cumuli,* and a breeze: windy night. 20. Much wind at S this evening. 21. Fleecy *Cumuli* beneath a hazy sky, with the lighter modifications: inosculation and *Nimbi* followed, with rain, sleet and snow. 22. Fair: sun and clouds. 23. Windy: shower at night. 24. A bright haze at sunrise and sun-set. 25. Fine day: some *Cirrostrati* assumed an arrangement not very frequent, of discs piled obliquely on each other. 26. *Cumulus,* capped with *Cirrostratus:* lunar corona. 27. After a gale through the night, rain before 9 a. m.: *Nimbi,* with hail, p. m.: at night large *Cirri,* very conspicuous by moonlight, stretching SE and NW. 28. Fair, save a light shower.

Third Mo. 1. Fair: windy. 2. A trace of solar halo about nine, in some *Cirri,* which soon subsiding went off with the wind to SE, grouping into forms like the crown of the *Nimbus: Cumulostrati* succeeded, which, p. m. gave place again to *Cirrose* obscuration, with a southerly gale and showers at night. 3 a. m. Overcast: p. m. steady rain: at sunset a hazy sky, and much vapour: a highly rarefied *Cumulostratus* in the SE: a hard gale, with rain at night. 4. Pale sky, a. m.: after which passing *Nimbi* and a little hail: calm night. 5. Hoar frost: fair, with *Cumulus* and *Cirrus:* evening, very large *Nimbi:* shooting stars: wind. 6. Wet morning: then fair, with various clouds: night frosty. 7. Pretty thick ice: fair day: rain at night. 8. Windy: ***snow in flakes about an inch and a half in diameter***: sleet and rain: at noon large *Cumuli* in the N, passing to *Cumulostrati,* the sky above them being blue to 15° of the cyanometer: about two, p. m. a sudden shower of hail from a dense lofty *Nimbus:* the balls were opaque, in the form of a cone with a rounded base, about half an inch diameter, and composed entirely of striæ meeting at the apex of the cone: (see page 142 for the figure,) we have had similar hail repeatedly of late: frost (after rain) at night. 9. The lighter modifications prevailed, a. m. the *Cirri* pointing to NW: after these, lofty *Nimbi* formed in the midst of groups of *Cumulus,* letting fall light showers: the night was clear frost.

RESULTS.

Winds Westerly.

Barometer:	Greatest height .	30·29 in.	[By Clock 30·32 in.]
	Least . . .	28·78 in.	[.. 28·70 in.]
	Mean of the period	29·592 in.	[.. 29·631 in.]
Thermometer:	Greatest height .	55°	
	Least . . .	28°	
	Mean of the period	42·06°	[Lab$^{y.}$ 42·71]

Mean of the Hygrometer 64°: its drier extreme was several times about 40°.

Rain	2·68 in.	[Lab$^{y.}$ 3·29 in.]

On the 2d and 3d of Third month there were violent thunderstorms to the W and S, the latter of which came as near to us as Tunbridge, but neither of them was much perceived here, save in the electric state of the clouds on the latter evening.

Amsterdam, Feb. 27.—It has blown hard for several days past, but in the night of the 25th it became a perfect hurricane: yesterday it abated, and is now moderate weather.

Thunder Storms.

During the night between the 26th and 27th of February, there was a hurricane at Glasgow, accompanied with rain, hail, thunder, and lightning. The wind was extremely violent, the thunder awfully loud, and the deep red flashes of lightning cast a glare during the whole night. The hail-stones broke the windows in all directions.

A storm, of singular awfulness, raged over the city of Dublin the whole of Thursday morning last, (February 27th,) accompanied with loud peals of thunder, frequent and vivid lightnings, and the heaviest showers of hail and rain. Alternate intervals of calm succeeded every blast of the tempest, which was at its height at four o'clock.

Aurora Borealis.

Edinburgh, March 6.—A little past eight o'clock, p. m. a beautiful *Aurora Borealis* nearly resembling that which appeared in September last, was distinctly visible here for a considerable time. A similar beautiful arch of bright light stretched across the heavens. It sprung from a point nearly ENE, and passing the zenith, terminated in the opposite point of the horizon. Its eastern limb was the brightest and best defined. The horizon in almost every point was obscured by dark broken clouds, which rendered both its beginning and termination less distinct than the last.

Sunderland.—On the 8th March, about seven in the evening, during a strong gale from the NW, which had continued five days, was observed here a most beautiful *Aurora Borealis.* It began in single bright streamers in the N and NW, which gradually increasing, covered a large space of the hemisphere, and rushed about with amazing velocity and a fine tremulous motion.—About eleven o'clock, part of the streamers appeared as if projected from a centre south of the zenith, and looked like the pillars of an immense amphitheatre, presenting the most brilliant spectacle that can be conceived, and seeming to be in a lower region of the atmosphere and to descend and ascend in the air for several minutes.—*Thomson's Annals, vol.* 9, *p.* 250.

Inundations.

From the Mayne, March 7.—For some days past, the waters have risen in a terrible manner on both sides of the Rhine, and that river itself has reached an uncommon height. It is about the same as it was at the end of the year 1800. The Kinzig and the Schulter are, however, not quite so destructive as they were two months ago.

The alarm bell has frequently been sounded in the communes about Kehl, in order to collect people to strengthen the Rhine-dikes. Hitherto the danger has been averted; the bridge of boats at Kehl is still standing, and the communication between the two banks open: but from the left bank we have the most melancholy accounts. The rivers there have every where overflowed their banks. Great ravages have been caused about Strasburg by the Ill and Breusch. All the fields and gardens round Strasburg form one great lake. All the streets near the river are under water, and the communication kept up by boats. The Ill has done still greater damage about Schlettstadt. Several persons and a quantity of cattle have perished.—*Allegemeine Zeitung*, *March* 12.

Genoa, *March* 15.—They say here—*there has been no winter south of the Alps this year.* As we passed through France, we often saw the country inundated from the snow and rain, but chiefly the latter. In Piedmont, the *dust* was the only thing that troubled us.

In addition to such notices as the above of the swollen state of the rivers in some parts of Swabia, France, &c. the foreign papers detail a number of accidents by *avalanches* in the Tyrol, the Grisons, and Switzerland. The reader will perceive that the occurrence of this kind of disaster is perfectly consistent with that of inundation. The same excess of snow and rain, which loosens these overwhelming masses from their bed, must also tend to overcharge the natural channels, in its escape through the lower country. Whether the slight earthquakes which, it appears, have been frequent of late on the Continent, may not also contribute to the production of avalanches, is a question for observers on the spot to decide.

THE SPRING IN FRANCE.

Paris, *March* 2.—The drivers of the little carriages for Versailles call out, '*There is still one seat left for Versailles; come and see the spring at Versailles.*' The crowd of curious persons going thither is very great. The fact which gives occasion to this, is the fine sight presented by the trees in the great Park, which display a vegetation, such as is seen in the month of May. Several trees in the Park of Trianon are covered with new leaves; the hawthorns in the open air are loaded with flowers. May the hope, which this early spring gives us, not be destroyed by frosts in the month of May! The Chronicle of Bullinguer mentions, after a calamitous year, the summer of 1540. The fine weather and the heat lasted from the month of February to the 19th of September, and during all this period it rained but six times. At the end of May ripe cherries were eaten, and grapes in July; the 25th of June was the midst of the harvests; and at the beginning of September, the vintage was at its height. Bullinguer adds, that this year was equally remarkable for the extreme abundance of wine, corn, and all sorts of fruit.

[*Note.*—Subsequent events have shown that the writer of this was a year too early in now anticipating a parallel to the summer of 1540: it occurred in 1818!]

STATE OF THE WINDS TO THE SOUTHWARD.

About forty sail of outward-bound vessels are lying at the Motherbank, Spithead, and Stokesbay, waiting a fair wind to proceed on their respective voyages: many of them have received their Custom-house clearances ten weeks. Though we have had such a continuance of westerly winds, yet it is stated by the master of a vessel from Teneriffe, that he experienced *nothing but northerly and easterly winds* on his voyage, until his arrival in Channel soundings. The Agricola, Captain Tabor, of and for New York, with passengers from Portsmouth, put into St. Helen's on Saturday with the loss of her sails. She sailed twenty-five days since (having been previously detained there two months by contrary winds,) and during that time she has never been able to get so far to the westward as Plymouth.—*Pub. Ledger*, *March* 11.

TABLE CXXIX.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q.3 mo. Mar. 10	NW	30·10	29·91	30·13	29·87	47°	28°	75	
11	SW	30·10	29·94	30·16	30·00	53	39	66	—
12	W	29·91	29·84	30·00	29·87	55	47	70	1
13		30·15	29·91	30·20	29·90	55	42	65	
14	NE	30·22	30·15	30·25	30·20	51	30	73	
15	SE	30·22	30·16	30·28	30·10	50	27	70	
16	E	30·23	30·16	30·23	30·17	49	27	82	
17	SE	30·24	30·20	30·30	30·23	48	25	85	
18	Var.	30·20	29·85	30·27	29·88	52	33	50	
19	NW	29·75	29·74	29·88	29·70	47	27	52	
20	N	29·88	29·75	29·85	29·70	34	24	47	
21	N	29·90	29·86	29·90	29·85	39	17	59	
22	SE	29·97	29·90	30·00	29·90	39	19	80	
23	SW	29·92	29·88	30·00	29·88	46	24	58	–
24	W	29·88	29·72	29·88	29·70	55	39	80	–
25	Var.	29·85	29·72	29·95	29·70	58	34	74	7
26	Var.	30·00	29·85	29·95	29·73	52	34	52	13
27	Var.	30·05	29·92	30·12	29·95	44	27	62	
28	SW	29·92	29·76	29·98	29·76	50	38	72	4
29	W	29·99	29·76	30·00	29·74	55	45	60	—
30	NW	30·23	29·99	30·14	30·00	59	39	50	
31	NW	30·51	30·23	30·53	30·14	54	32	64	
4 mo. April 1	S	30·51	30·37	30·55	30·42	56	36	67	
2	SE	30·37	30·27	30·42	30·30	58	33	50	
3	E	30·33	30·27	30·40	30·32	60	37	65	
4	NE	30·33	30·30	30·40	30·35	56	34	70	
5	N	30·32	30·25	30·35	30·30	53	26	64	
6	NE	30·43	30·32	30·46	30·35	50	37	52	
7	E	30·37	30·20	30·49	30·27	52	30	60	
		30·51	29·72	30·55	29·70	60	17	64	0·25

NOTES.—Third Mo. 10. Fine, with *Cumulostratus.* 11. A mist, probably from the Thames, there having been much *Cirrostratus* at sun-rise in the SE: cloudy, p. m. with a few drops. 12. a. m. *Cirrostratus* in flocks: at evening a slight shower, with wind. 13. Fair: overcast with *Cumulostratus.* 14. This morning at eight the wind sprang up at NE, a gentle breeze, which, being propagated upward, carried a veil of *Cirrostratus* off to SW: in the evening the sun's disk was curiously disfigured by the intervention of *Cirrostratus,* with vapour: after being divided, and afterwards crossed as by belts of this cloud, the lower portion came out much extended horizontally, while the rt yet obscured became somewhat conical upward. 15. a. m. *Cirro-*

stratus: misty to SW, after which light breezes and general cloudiness. 16. Hoar frost: fair: wind SE a. m., NE p m. 17. A dripping mist, after hoar frost: then *Cumulus,* and the wind S. 18. Hoar frost, misty morning, SE: clear day: p. m. the wind SW, a smart breeze: clouds after dark. 19. a. m. Wind SW: *Cumulus,* beneath *Cirrocumulus* and *Cirrostratus:* p. m. windy at NW: *Cumulostrati* and *Nimbi,* with a little hail. 20. A gale at NNW, tending continually to go to N: a very scanty snow at intervals. 21. Very fine: *Cumuli* prevailed, which evaporated at sunset: the roads quite dusty: wind tending to E, a smart breeze: night calm. 22. Hoar frost: hygr. noted at eight a. m.: very light breeze. 23. Hoar frost: fine day: evening obscured by *Cirrostratus,* which descended from above. 24. Some drizzling rain this morning. 25. Hoar frost: rain: a hail shower: p. m. the wind NE. 26. a. m. Overcast with *Cirrostratus:* small rain, p. m. 27. Very fine day: wind a. m. NNE, with *Cumulus* and *Cirrostratus.* 28. Wind S, a. m. with *Cirrostratus:* drizzling rain. 29. Temp. 50° at nine a. m.: windy at SW. 30. Very fine morning, with dew: *Cumulus* beneath *Cirrocumulus* and *Cirrostratus:* a few drops of rain: a small yellow lunar halo: much wind in the night. 31. Windy: *Cumulus* beneath large *Cirri:* a lunar halo, white and of large diameter.

Fourth Mo. 1, 2. Light driving mists, followed by fine days. 3. Hoar frost: rose-coloured *Cirri* at sunset. 5. Cloudy: a few drops: misty night. 6. Hoar frost: *Cumulus,* with *Cirrocumulus:* windy. 7. Windy at SW by night, with mist.

RESULTS.

Winds for the most part light and variable, but on the whole Northerly.

Barometer:	Greatest height .	30·51 in.	[By Clock 30·55 in.]
	Least . . .	29·72 in.	[.. 29·70 in.]
	Mean of the period	30·07 in.	[.. 30·08 in.]
Thermometer:	Greatest height .	60°	
	Least . . .	17°	
	Mean of the period	41·5°	[Lab^{y}· 42·57°.]
Mean of the hygrometer .		64°	
Rain		0·25 in.	[Lab^{y}· 0·21 in.]

The change from the turbid Atlantic air which had for many months been flowing over us, to a dry transparent medium, was, from the commencement of this period, strikingly obvious to the sense. The sun assumed a splendour, and the moon a brilliancy, to which the eye had been long unaccustomed, and distant objects seemed as it were restored to the landscape. The mean of the barometer is the highest that has occurred to me since the spring of 1813: the *ten* dry days about the commencement of the period were the first that had happened in strict succession for twelve months; and there has not fallen so little rain in any lunar period that I have registered since the beginning of 1810. The evaporation has doubtless been excessive, and I regret that I have kept no account of it, for the state of the hygrometer did not fully indicate the dryness of the air, on account of the misty mornings.

TABLE CXXX.

1816.	Wind.	Pressure. Max.	Pressure. Min.	By Clock. Max.	By Clock. Min.	Temp. Max.	Temp. Min.	Hygr. at 9 a. m.	Rain, &c.
L. Q. 4mo. April 8	Var.	30·20	29·89	30·27	29·88	58°	34°	59	1
9	NE	29·97	29·89	30·02	29·88	46	28	46	—
10	N	30·23	29·97	30·24	29·95	40	25	50	—
11	NW	30·23	30·02	30·30	29·99	46	29	53	
12	NW	30·01	29·96	30·07	29·98	49	39	63	
13	NW	30·04	30·00	30·10	30·02	55	38	53	6
14	NW	30·00	29·93	30·02	29·94	60	42	55	—
15	NW	29·72	29·67	29·94	29·66	61	41	50	—
16	N	30·11	29·72	30·15	29·70	48	32	52	2
17	N	30·30	30·11	30·37	30·15	42	34	43	
18	N	30·37	30·30	30·42	30·37	53	26	50	
19	NE	30·32	30·30	30·43	30·38	55	40	42	
20	NE	30·34	30·33	30·40	30·38	55	34	50	
21	NE	30·34	30·27	30·38	30·31	59	32	46	
22	SE	30·27	30·17	30·32	30·20	57	29	60	
23	NE	30·20	30·17	30·27	30·19	50	27	59	3
24	NE	30·20	30·14	30·25	30·17	52	35	52	2
25	NE	30·14	30·12	30·18	30·02	44	36	46	
26	NE	29·93	29·87	30·02	29·86	49	40	44	
27	Var.	30·09	29·93	30·15	29·95	50	32	40	
28	W	30·09	29·91	30·15	29·93	58	43	45	
29	NW	29·91	29·70	29·93	29·69	48	37	47	—
30	NE	29·81	29·69	29·82	29·70	50	39	55	·10
5th mo. May 1	NE	29·93	29·81	29·98	29·82	48	34	50	
2	NW	29·93	29·84	29·98	29·88	56	30	42	
3	W	29·77	29·72	29·88	29·74	60	45	45	—
4	NW	30·01	29·77	30·10	29·75	60	32	41	
5	SW	30·06	29·95	30·10	30·00	64	35	48	
6	N	30·16	30·06	30·27	30·10	64	36	34	
7	SE	30·06	29·77	30·27	29·80	60	37	50	4
		30·37	29·67	30·43	29·66	64	25	49	0·28

NOTES.—Fourth Mo. 8. The wind was for some time at SW: rain in the night. 9. Cloudy, a. m.: a shower of driven granular snow in the night. 10. *Cumulostrati* and *Nimbi*, giving small quantities of now. 11. *Cumulostratus* windy. 12. Mostly overcast: very light in at intervals. 13. Small rain, a. m.: fair p. m. 14. A little light air: large plumose *Cirri* above *Cumuli*. 16. a. m. A strong W and N, with a shower and hail: rainbow: fair day after, *tratus:* dark sky: windy. 18. *Cumulostratus:* the wind nd NW: calmer day, 19. The hygrometer noted at ten:

Cumulostrati prevailed, surmounted by the lighter modifications: windy: the part of the moon's disc in shade was distinctly visible, and the light crescent very conspicuous in the evening: a small meteor passed to the NE. 20. a.m. Windy, not steady to the NE: *Cumulostrati.* 21. a. m. *Cirri* pointing westward, with *Cumuli* beneath: afterwards an arrangement of this cloud in regular parallel streamers from NW to SE., which became red at sun-set. 22. With the SE wind this morning the *swallows* appeared, but few in number, and flying feebly: a serene evening, after *Cumulus,* and *Cumulostratus.* 23. Hoar frost early: cloudy: windy: a shower from the NE p. m.: clear evening: the hygrometer to-day receded to 32°, and the superior part of the clouds, after the rain, presented a configuration like the *pore of sponge,* which I have not observed before for some years. 24. *Cumulostratus:* windy: a shower at night. 25. a. m. Overcast: windy: *Cumulostratus.* 26. The same, the breeze growing stronger. 27, 28. Chiefly overcast with *Cumulostratus* and *Cirrocumulus.* 29. The same, with *Cirrostratus:* a slight shower by night. 30. A moderate gale at NE, with showers and much cloud: *Nimbi:* a little hail.

Fifth Mo. 1. Cloudy: windy. 3. A slight shower in the night. 5. The hygrometer receded to 32°. 6. The wind went from N to E. 7. Wind SE: a breeze: very clear all day, and a full orange twilight: by six, a. m. the 8th, it was however SW, with a slight shower.

RESULTS.

Winds almost uniformly Southerly, and moderate in force.

Barometer:	Greatest height	30·37 in.	[By Clock 30·43 in.]
	Least	29·67 in.	[.. 29·66 in.]
	Mean of the period	30·028 in.	[.. 30·069 in.]
Thermometer:	Greatest height	64°	
	Least	25°	
	Mean of the period	43·85°	[Lab^{y}· 44·91°]
Mean of the hygrometer		49°	
Rain		0·28 in.	[Lab^{y}· 0·22 in.]

Vegetation has been peculiarly slow during this dry, cold period.

On the 19th of Third Month I had an opportunity of observing that rare phenomenon the *Anthelion.* It was formed on the perpendicular part of a lofty dense *Cumulostratus,* which happened to present in the NE at near 5 p. m. a surface directly opposed to the sun, reflecting *an image of the disk,* at the same apparent height from the horizon. In a few minutes, and almost as soon as I had satisfied myself of the fact, it was obliterated by a new protuberance in the cloud destroying the direct reflection. An Anthelion observed by Swinton near Oxford, in 1762, is described, with a figure, in Vol. XI. of the Phil. Trans. Abridged, p. 532, to which the reader is referred: but in the present instance, the whole cloud being bright, the contrast between the general surface and the sun's image was probably less striking than in Swinton's observation.

TABLE CXXXI.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 5 mo. May 8	Var.	29·72	29·68	29·80	29·74	72°	42°	49	8
9	NE	29·68	29·49	29·78	29·50	54	37	59	
10	SW	29·43	29·35	29·50	29·35	60	38	45	—
11	Var.	29·35	29·23	29·49	29·21	60	43	48	15
12	W	29 63	29·23	29·63	29·25	61	38	45	—
13	SW	29·63	29·59	29·74	29·60	59	34	58	13
14	W	29·74	29·59	29·75	29·59	59	41	41	45
15	SW	29·90	29·74	29·95	29·75	62	33	49	
16	Var.	29·90	29·80	29·95	29·83	65	33	50	
17	SW	29·80	29·55	29·83	29·63	67	39	42	1
18	SE	29·43	29·36	29·63	29·40	72	44	53	11
19	NE	29·46	29·43	29·50	29·43	53	38	67	—
20	NE	29·42	29·34	29·45	29·33	52	43	80	—
21	NE	29·42	29·40	29·41	29·32	48	38	59	—
22	SW	29·42	29·40	29.45	29·40	57	40	50	1·44
23	W	——	——	29·48	29·40	—	—		—
24	NE	29·40	29·27	29·48	29·30	62	35	65	18
25	SE	29·19	29·16	29·30	29·10	57	45	58	29
26	E	29·37	29·17	29·40	29·10	63	41	44	
27	NE	29·59	29·35	29·60	29·40	69	38	53	
28	NE	29·59	29·56	29·66	29·57	59	47	77	
29	*NE*	29·80		29·80	29·58		40	51	—
30	*NE*	29·90		29·90	29·80		38		23
31	*NW*	29·75	29·68	29·90	29·78	59	33	50	
6 mo. June 1	SW					63	42	41	
2	W	29·64	29·58			64	46		
3	W	29·59	29·45			64	52		
4	W	29·99	29·45			65	45		
5	SW	29·91	29·89			65	47	54	11
		29·99	29·16	30·07	29·10	72	33	54	3·18

Notes.—Fifth Mo. 8. *Cirrocumulus,* mixed with *Nimbi,* a. m. [illegible] which, the cloudiness becoming general, a thunder-storm ensued [illegible] after four, p. m.: it came from the SW, with the wind at SE. [illegible] wind, a. m. with a general cloudiness. 10. Overcast, a. m. [illegible] *Cumulostratus:* a few drops of rain. 11. *Cumulus, Cumulostratus,* [illegible] *Nimbus:* the wind NW and SW: rain with wind at night from [illegible] 12 a. m. A westerly gale. 13. Showery, with hail [illegible] wery: hail, pretty large, at noon from the southward. [illegible] 17. A shower, p. m. 18. Cloudy, a. m.: gentle rain p. m. 19. Windy, cloudy, a. m. wet p. m. 20, 21. Rainy. 22. Cloudy. 23, 24. Some showers: a *Stratus* at nine, p. m. the latter day. 25. Thunder at a distance: showers, a. m. 27. A thick fog at night, undoubtedly a *Stratus*.

RESULTS.

Winds variable, but for the most part Westerly.

Barometer:	Greatest height .	29·99 in.	[By Clock 30·07 in.]
	Least . . .	29·16 in.	[.. 29·10 in.]
	Mean of the period	29·533 in.	[.. 29·566 in.]
Thermometer:	Greatest height .	72°	
	Least . . .	33°	
	Mean of the period	50·70°	[Lab$^{y.}$ 51·16°]
Mean of the hygrometer	.	54°	
Rain		3·18 in.	[Lab$^{y.}$ 3·64 in.]

[Travelling in the interval from the 13th to 17th of Fifth month to Leeds, and home again, I found cloudiness from large *Cumuli*, &c. general, but met with very little rain. On the 15th, passing between Leeds and Pontefract, there was a fine display of *Nimbi*, one of which let fall a heavy shower on the latter place and its environs. On the 17th, after a deep orange tint in the morning twilight, the sun rose *red* behind a *Cirrostratus;* in emerging from which the brilliant part of the disc was divided by a well-defined line from the lower and coloured portion.]

I had anticipated a *third* dry period, similar to the two we had experienced, and expected that the rains would return after the summer solstice: in this I have been happily mistaken. In the beginning of the present period the weather took a new type with us, the westerly current coming in again, with some discharges of electricity, bringing rain, which gradually became more plentiful, and proved exceedingly seasonable. Vegetation has passed, in consequence, from a starved and backward state, to one of considerable luxuriance and promise. It is observable, that the barometer during this period has scarcely passed the boundary of thirty inches in elevation, and has certainly not descended below twenty-nine inches. The mean temperature, though 6° higher than that of the period immediately preceding, is low for the season.

GREAT RAIN AT STUTGARD.

PARIS, *June* 5 —Letters from Stutgard, dated May 28, inform us, that on the 26th the rain began to fall in torrents, and did not cease for three days and three nights; all the rivers were overflowed, and it produced an inundation far surpassing any thing ever recollected in that country.

The lower part of the small town of Constatt, a league from Stutgard, was under water, and the suburbs were evacuated by the inhabitants. Several individuals and many animals were drowned at Constatt: on the evening of the 28th the rain ceased.—(PUB. LEDGER.)

NOTE.—It is observable that this unusual fall of rain in a part of Germany four hundred and fifty miles SE of the Thames, began at the precise time, when after nine days of wet weather, it became fair with us; and that during its continuance, with a sufficiently low state of the Barometer, we were without rain.

TABLE CXXXII.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 6 mo. June 6	SW	29·89	29·84	29·90	29·87	74°	55°	45	
7	SW	29·84	29·64	29·87	29·67	77	51	50	
8	SW	29·79	29·64	29·83	29·68	67	44	61	—
9	SW	29·79	29·67	29·83	29·70	60	54	54	70
10	NW	29·94	29·67	30·03	29·70	67	40	47	6
11	SW	29·89	29·68	30·02	29·73	71	50	54	
12	SE	29·68	29·52	29·73	29·55	—	—	54	
13	Var.	29·37	29·17	29·55	29·15	65	48	48	39
14	NW	30·05	29·37	30·10	29·35	61	43	41	1
15	W	30·23	30·05	30·30	30·10	63	34	43	
16	E	30·23	30·00	30·30	30·02	70	40	42	
17	SE	30·00	29·62	30·02	29·63	76	50	42	
18	SE	29·67	29·62	29·66	29·60	79	52	42	
19	SE	29·75	29·67	29·75	29·66	83	53	48	
20	SE	29·83	29·75	29·82	29·73	83	59	47	
21	NE	30·00	29·83	30·00	29·82	86	59	51	
22	NE	30·00	29·90	30·00	29·92	84	56	50	
23	N	29·90	29·87	29·92	29·87	84	59		
24	W	29·90	29·87	29·93	29·87	82	58	47	—
25	W	29·92	29·80	29·93	29·80	77	52	61	
26	W	29·80	29·55	29·80	29·55	76	58	42	—
27	NE	29·65	29·50	29·66	29·50	83	56	43	—
28	W	29·92	29·65	29·93	29·66	72	45	42	—
29	SW	29·92	29·65	29·92	29·63	74	55	40	1·07
30	SW	29·77	29·65	29·77	29·63	68	44	39	—
7 mo. July 1	SE	29·65	29·37	29·70	29·37	60	55	51	
2	SW	29·90	29·60	29·90	29·60	68	48	50	
3	W	29·90	29·55	29·90	29·56	70	54	54	
4	SW	29·55	29·48	29·57	29·47	68	51	44	
5	NW	29·67	29·50	29·65	29·50	70	49		58
		30·23	29·17	30·30	29·15	86	34	47·5	2.81

NOTES.—Sixth Mo. 7. Much *Cirrocumulus,* a. m. in beds at a considerable elevation in the evening a group of thunder clouds in the S and SE, which passed, after a single peal of thunder to the eastward. 8. Windy: light showers, a. m. heavier rain, p. m. 9. Stormy wet day and night. 10. Showers: *Cumulostratus* at sun-set, 11. Fine morning. 13. Wet blowing day: stormy night. 14. Much wind and cloud, a. m.: slight shower: evening more settled. 15. Windy at NW, a. m.: *Cumulus,* with *Cirrostratus: Cumulostratus:* fair: *Stratus* at night. 16. Fine: *Cirrus* at evening. 17. A *Stratus* visible at four a. m.: very fine day: luminous twilight, with the moon conspicuous: *Cirri* after sunset. 19. Hot sun-shine: fair. 20. Lightning this evening. 21. *Stratus* at night. 22. Continued thunder in the SE p. m. 23. Rather cloudy, a. m.: a fine breeze. 24. Morning cloudy, then fine: in the evening, heavy rain, with hail, thunder, and lightning: hygr. before the storm at 36°. 25. Cloudy morning. 26. Misty morning: drizzling rain, then fine. 27. A thunder storm between six and seven in the evening: very heavy rain, with thunder and lightning. 28. Heavy showers, evening. 29, 30. Cloudy, with showers.

Seventh Mo. 5. Thunder in a mass of clouds to the south and south-west: some rain with us.

RESULTS.

Winds Variable.

Barometer:	Greatest height .	30·23 in.	[By Clock 30·30 in.]
	Least . . .	29·17 in.	[.. 29·15 in.]
	Mean of the period	29·751 in.	[.. 29·772 in.]
Thermometer:	Greatest height .	86°	
	Least . . .	34°	
	Mean of the period	61·83°	[Lab$^{y.}$ 62·58°]
Mean of the hygrometer . .		47·5°	
Rain		2·81 in.	[Lab$^{y.}$ 1·29 in.]

A WATERSPOUT.

On the 27th of the Sixth month, about seven in the evening, there occurred in our neighbourhood an undoubted exhibition of that rare spectacle (to observers on land)—the *waterspout.* I shall give the observations of two of our workmen at the Laboratory, who saw it from Stratford, passing on their N. horizon from NW to NE. I was absent myself in the West of England; but my friend John Gibson witnessed the latter part of the phenomenon.

The weather over head had been exceedingly dark and threatening, and there had been thunder and rain in that direction; but at the time of the observation a clear sky was discernible beneath the clouds. From a dense cloud, the base of which might be at an elevation of 20°, there issued suddenly a *descending cone,* which one of the observers compared to a steeple inverted: this returned back to the cloud: a second and a third followed, one of which came lower, with a considerable *perpendicular oscillation,* and at length *opened out* below; and a *straight column,* which he compared to a dart, proceeded from its enlarged extremity to the earth, being visible also as a *denser body* pretty far up into the cloud. In a little time this cone also, being its appendage, was drawn up again, and another or two, similar to the first-mentioned, succeeding, closed the train of appearances, the whole having lasted about fifteen minutes.

The course of this spout appears to have been over the country about Hampstead. In a communication, by another observer, to the Philanthropic Gazette, a person is stated to have been overtaken by it on Hampstead Heath, and to have been drenched by a fall of rain in very unusual torrents during its short passage. He conceived the spout to touch the top of the tree under which he had retired for shelter. The denser column seen by the observer at Stratford to proceed from the cloud, admits of an explanation when connected with this fact. It was probably an extremely heavy shower, or rather *stream of water*, (of small diameter compared with showers as they usually fall) generated in the axis of the cone of cloud by the strong electrical action which produced the latter; and serving ultimately as a conductor, through which the electricity rushed at once, and the equilibrium was so far restored as that a second discharge in this way could not be effected. Had it been at *sea*, the tendency of the superinduced moveable surface of the waters to unite with the cloud, would probably have raised up a column of salt water to meet it: and the appearances would then have made the phenomenon complete in all its parts.

[It seems that a portion of this water, falling upon Tottenham, occasioned the excess of rain in that guage over the one at Stratford.]

The character of this period was certainly highly electrical: a display of excessive heat for ten days about the solstice, was introduced by SE winds, and ended, as usual in these cases, in a copious rain.

THUNDER AND HAILSTORMS.

The Papers make mention of violent thunder storms, attended with large hail, on the 9th of the Sixth month at Dunkeld (Scotland), and on the 10th, in the forenoon at Edinburgh and Dundee, and at midnight at Cupar in Fife. On the 24th there was a thunder storm at *Dublin*, which is a rare occurrence there.

The Bath paper says—" The heat of the sun, during the last few days, has been more excessive than we have experienced for some years past. Friday (June 20,) Fahrenheit's thermometer stood at 82°; on Saturday, in the shade, it stood at 86° from three to five o'clock in the afternoon, being ten degrees above summer heat, and notwithstanding the cloudiness of the day, the thermometer was at 103° in a more exposed situation; and on Monday in the sun it rose as high as 113°. At Weymouth on Saturday, the thermometer stood at noon in the shade at 86, and in the sun at 112°: while at Gloucester, on the same day, it rose to 103° in the shade. This intense heat, as might be expected, has been productive of thunder-storms in many parts of the country. The vicinities of Gloucester and Tewkesbury experienced some of their effects on Saturday afternoon ; and the inhabitants of the latter place have sustained considerable loss by the hail, which broke many windows.—At Lyneham, near Chippenham, on the same day, a water-spout inundated a considerable quantity of land, and occasioned a rapid rise of the Avon, which sensibly affected the river at this distance.—Salisbury and its neighbourhood appears to have received the brunt of the storm. It commenced there about two o'clock in the afternoon, with almost an instantaneous darkness, and a violent rushing of wind from the north-east, accompanied by sheets of water and large pieces of ice. About three the wind from the north-east ceased, and suddenly it commenced blowing from the south-west, with such torrents of rain for more than half an hour, that every street was flooded, and the water ran through many of the houses. The lightning was not very vivid, nor was the thunder extremely loud; but they continued during the whole of the storm, which lasted till six o'clock. Forty sheep, of a flock belonging to Mr. Swayne, of Langford, were struck down by the lightning, and six sheep and six lambs killed; several large trees were also blown down during the storm at Durnford and West Harnham. The storm also visited this city about two o'clock, and continued till five, but its effects were not marked by any extraordinary circumstance. But very considerable damage was sustained by the unexampled violence of a storm which occurred here on Monday afternoon (June 23d ;) the rain fell in such torrents that the common sewers were soon choaked, and the lower apartments of many houses were in consequence flooded; almost every hot and green-house, and sky-light in the neighbourhood, suffered in its glass, more or less, from hailstones, many of which were two inches in circumference."—PUB. LEDGER, *June* 27.

I had occasion from a curious accident to notice the weight of rain on the day of the last-mentioned thunderstorm. Travelling with a relation, we had entered our inn at *Exeter* just as the storm began, it being evening, and taken possession of a parlour on the first floor; when in an instant a copious stream of sooty water flowing from the *fireplace* (the gutter having by some means found a discharge into the chimney) compelled us to summon the servants, and retreat hastily into another apartment.

The Dutch Papers contain various accounts of damage done by the storms of hail, accompanied with thunder and lightning, on the 25th, 26th, and 27th of June.

Boitzenburg, *July* 2.—Yesterday we had a tempest with a terrible hailstorm, which has almost entirely laid waste the fields of Horst and Viechoff, in Lauenburg ; so many windows are broken, that there is not glass enough in town to repair them ; the hail was jagged, and many pieces above one inch long.—(PUB. LEDGER.)

TABLE CXXXIII.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7 mo. July 6	SW	29·68	29·59	29·72	29·62	70°	45°	48	—
7	SW	29·73	29·67	29·80	29·70	71	46	45	
8	SW	29·78	29·73	29·83	29·78				
9	SW	29·78	29·73	29·83	29·75	75	47	44	
10	S	29·68	29·66	29·75	29·71	76	48	46	—
11	S	29·73	29·66	29·80	29·73	73	55	55	—
12	NW	29·88	29·73	29·96	29·80	68	48	43	
13	SW	29·88	29·60	29·91	29·60	71	50	49	13
14	NW	29·60	29·14	29·60	29·12	70	52	65	72
15	SW	29·54	29·06	29·60	29·07	70	49	46	18
16	NW	29·77	29·54	29·83	29·60	69	49	46	
17	NW	29·77	29·73	29·83	29·74	71	52	48	15
18	NW	29·85	29·77	29·92	29·77	67	46	44	
19	NW	29·90	29·85	29·95	29·90	69	42	41	
20	S	29·90	29·81	29·93	29·85	72	54	61	3
21	SW	29·85	29·70	29·85	29·70	73	56	63	4
22	SW	29·85	29·75	29·87	29·75	70	52	40	
23	SW	30·00	29·85	30·00	29·87	70	50	52	7
24	SW	30·00	29·95	30·04	29·96	71	45	46	
25	SE	29·95	29·80	29·98	29·82	72	50	40	
26	S	29·80	29·60	29·82	29·60	66	47	50	20
27	W	29·85	29·60	29·82	29·60	66	47	40	13
28	W	30·00	29·75	30·00	29·82	68	48	39	10
29	W	29·75	29·69	30·00	29·74	70	50	45	14
30	W	29·75	29·67	29·75	29·67	71	48	45	3
31	SW	29·75	29·67	29·75	29·66	71	44	45	
8th mo. Aug. 1	SW	29·92	29·75	29·92	29·75	69	41	49	
2	SW	29·92	29·65	29·92	29·65		54	50	
3	W	29·75	29·65	29·75	29·65	68	46	54	
4	SW	30·00	29·67	30·00	29·67	68	50	53	3
		30·00	29·06	30·04	29·07	76	41	48	1·95

NOTE.—Seventh Mo. 6. Some rain, a. m. windy: twilight orange coloured. 7. *Cumulostratus:* fair. 8, 9. Fair: cloudy: red sun-set. 10. Cloudy: calm: a light shower. 11. Cloudy: a light shower. a. m. 12. Cloudy: a light shower early: fair day. 13. Large *Cirri:* fine, a. m.: *Cirrocumulus: Cirrostratus:* windy: cloudy: shower, evening. 14. Cloudy morning, followed by several light showers. 15. Rain in the night, and a wet morning, much *Cirrostratus,* with a pretty calm air; afterwards the *Nimbus* prevailed, with sudden showers; and it was stormy at night. 16. Cloudy: calmer: fair. 17. Cloudy: *Cirro-*

cumulus: Cirrostratus: fair day: rain in the night after. 18, 19. Cloudy: windy: fair: a ruby-coloured twilight, the clouds rapidly dispersing at the time. 20. *Cirrostratus,* alternating with *Cirrocumulus:* then *Cumulostratus* and rain in the evening. 21. Cloudy, windy, a. m. a fine display of *Cirrostratus* in elevated beds, passing to *Cirrocumulus.*

Eighth Mo. 1. Chiefly showery for the last ten days, with thunder three times.

RESULTS.

The winds uniformly Westerly, a single observation excepted, which was of short continuance.

Barometer:	Greatest height .	30·00 in.	[By Clock 30·04 in.]
	Least . . .	29·06 in.	[.. 29·07 in.]
	Mean of the period	29·743 in.	[.. 29·774 in.]
Thermometer:	Greatest height .	76°	
	Least . . .	41°	
	Mean of the period	59·32°	[Lab$^{y.}$ 60·01°]
Mean of the hygrometer . .		48°	
Rain.		1·95 in.	[Lab$^{y.}$ 3·09 in.]

The period was throughout changeable, cloudy, and windy, the barometer fluctuating (save in one depression) between the limits of 29·5 and 30 inches. The rain fell chiefly in two distinct spaces of five days each, determined, as it appears, by the occurrence of New and Full Moon.

The following observation was communicated to me by my friend Thomas Forster, at Tunbridge Wells.

July 30, 1817.—11$^{h.}$ 30$^{m.}$, p. m. A fine coloured *paraselene,* about 23° ENE of the moon. It lasted about three minutes; and then there broke out from it a tapering or conical band in the direction *from* the moon, i. e. ENE; and in a minute more the whole disappeared. Features of *Cirrostratus* were discernible at the edge of the thin cloud in which it was seen.

About six o'clock last evening, the metropolis was visited by a dreadful hailstorm from the westward, which must have damaged innumerable panes of glass in houses having a western aspect. The storm lasted about seven minutes, and most of the hailstones which fell were as large as hazel nuts.—(PUB. LEDGER, *July* 20.)

TORNADOES.

Extract of a Letter from Derby.—" Friday afternoon, (July 11,) about two o'clock, this neighbourhood was visited by the awful, but happily very rare phenomenon of a tornado. It advanced from the south-west, and first came in contact with the earth near the Depôt, about three quarters of a mile from Derby, where it was most violent. It there tore up a fine ash tree by the roots, several large branches of which were carried to a considerable distance; and in its progress it took up a quantity of new hay from the grounds of E. S. Sitwell, Esq. (not less than half a ton) which was carried to an immense height, dispersed to a wide extent, and carried along with the clouds.--The storm happily passed over without doing any injury to the town. It was accompanied by very heavy rain, which brought down portions of the hay, some of which was very closely matted together, but the greater part was borne along with the clouds till quite out of sight. The vanes of All Saints' Church were observed to turn round at intervals during the storm, and although the air must have been so greatly agitated in the upper regions, it was perfectly calm below. The storm took a northerly direction, and as soon as it had passed away, the sky became clear, and the air remarkably hot; soon afterwards the clouds collected again, with rain for the remainder of the day. The quantity collected in Mr. Swanwick's rain gauge was one inch and a half."—(PUB. LEDGER, *July* 21.)

Altona, July 16.—On the 11th of this month sixteen or seventeen houses were entirely overturned, and several others considerably damaged by a water-spout (tornado) in the village of Wattenbeck, near New Munser.

Pforzheim, July 12.—Yesterday afternoon a dreadful hail-storm fell here, and also at Ispringen and Eckingen; the hail-stones were all triangular, and as large as pigeon's eggs. Many persons were severely wounded in the hands and head; a great many windows were broken, and what is more distressing, the fine corn-fields were almost entirely laid waste in a quarter of an hour.

INUNDATIONS ABROAD.

All the accounts from the Eastern part of Switzerland announce the terror and the damage caused by the late inundations.

The storms have carried desolation into the lower parts of the Canton of Glaris.

The Linth has broken its dikes in three places. The bridges of Glaris and Helstal have fallen down; that of Miolis threatens to go to ruin. Gessau, Rutti, Fleriscue, and Hagelschauer in Teggenburg, felt the whole violence of the storms of the 4th and 5th (July?). All the torrents have overflowed. The bridge of Aberglatz is in ruins.

At Bâle the Rhine rose so much on the 6th, as to inundate the city as far as the fish markets; the citizens were forced to cross the streets in boats. The Rhine continually brought down with it trees, parts of buildings, and drowned animals, showing by these numerous wrecks the ravages it has exercised elsewhere. At Constance the lake was much higher on the 6th than in 1666, and even some inches higher than in 1560. In spite of unremitting exertions, the bridge of Lindau is carried away. On the banks of the lake many communes are under water, and it is feared will continue so for a long time, the vents by which the waters must run off when the lake falls, being too small. In the Lower Rhinthal the surface of the waters which cover the fields and roads, and upon which one may easily navigate between half-ruined houses, was three leagues in circumference. At Horn, and all along the lake, a great many buildings are abandoned; the waters threaten the foundations of the most solid edifices. In the Oberland, many bridges have been carried away. The fields, the meadows, the plantations, were entirely submerged, and pieces of the soil were seen floating about, torn up by the fury of the waters, covered with potatoes, vegetables, and hay. On the 9th, during a violent tempest, the lightning struck the village of Deterswell, and burnt a house. Near Neutingen, many cattle were killed by lightning. Other accounts, equally distressing, have been received from other quarters.—(PUB. LEDGER, *Aug.* 2.)

WEATHER IN ICELAND.

Reikiavick, Aug. 17, 1817.—Last winter was one of the severest we have had for a long while, in particular from the beginning of February to the end of March, with changeable winds and heavy snow. From the beginning of April until the 1st of May, we had often fine and mild weather with thaw; but on May 2, we had a storm from the north with much snow; and from that day until July 7 we had nothing but northerly winds with frost and cold weather. The Greenland drifting ice, which had left the northern land in the beginning of April, returned again in the first days of May, and surrounded the whole of the western, northern, and eastern land. From about July 7 the weather has been very dry and often pretty warm.—*Thomson's Annals of Philosophy*, vol. ii. p. 229; from the Danish Official Gazette, communicated by Sir Joseph Banks.

The reader is requested here to refer to the notes following Tab. LII, where I have made a comparative statement of the winds and temperature, proving that during *our* cold weather, they have mild weather in *Iceland*, and *vice versa*. And if he will take the pains to carry the parallel, for himself, through the periods indicated in the above-cited notice from Reikiavick, he will find it lead to a similar result.

TABLE CXXXIV.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 8 mo. Aug. 5	NE	30·05	30·00	30·07	30·00	70°	48°	47	
6	NE	30·00	29·85	30·05	29·85	74	40	44	
7	NW	29·83	29·45	29·85	29·46	75	55	44	
8	SW	29·58	29·45	29·71	29·47	67	48	55	
9	W	29·72	29·59	29·82	29·71	71	45	44	
10	SW	29·72	29·71	29·85	29·70	71	34	50	10
11	SW	29·72	29·33	29·70	29·34	71	48	52	—
12	SW	29·33	29·17	29·35	29·14	68	52	50	45
13	SW	29·55	29·33	29·65	29·20	67	54	55	
14	W	29·61	29·55	29·75	29·56	71	54	62	3
15	W	29·78	29·55	29·88	29·75	68	46	48	4
16	S	29·58	29·55	29·80	29·43	70	48	45	22
17	W	29·87	29·59	29·94	29·68	66	45	50	6
18	SW	29·64	29·59	29·94	29·65	66	54	49	28
19	SW	29·64	29·55	29·68	29·54	68	54	60	6
20	W	29·64	29·55	29·72	29·60	69	50	50	—
21	NW	30·02	29·64	30·00	29·72	59	42	64	12
22	E	30·02	29·94	30·10	30·00	63	35	50	
23	SE	29·94	29·68	30·00	29·75	67	48	58	
24	S	29·68	29·20	29·75	29·25	65	50	45	—
25	SW	29·20	29·00	29·25	29·00	62	48	63	29
26	S	29·08	28·90	29·00	28·89	64	44	55	15
27	SW	29·55	29·08	29·60	29·00	68	51	48	3
28	SW	29·64	29·54	29·72	29·52	68	51	50	12
29	W	29·80	29·64	29·87	29·55	69	47	53	
30	SW	29·80	29·75	29·90	29·77	71	54	53	18
31	SW	29·95	29·75	30·02	29·80	67	41	53	
9 mo. Sept. 1	NE	29·98	29·95	30·07	30·03	69	37	64	
2	E	29·98	29·83	30·04	29·88	69	48	58	
		30·05	28·90	30·10	28·89	75	34	52·3	2·13

Notes.—Eighth Mo. 21. A wet morning: windy at N: p.m. cloudy, with wind about NNW: pretty calm at night. 22. Fair, with *Cirrostratus* beneath *Cirrus:* gold-coloured moon: calm at night. 23. Fine morning: there is said to have been hoar frost: a few *Cumuli* appeared, which soon became heavy *Cumulostratus:* and in the evening it was quite overcast, with a few drops of rain. 24. Fine, a. m.: the wind SE: a little rain, p. m.: during the day a singular anomalous veil of cloud overspread the sky, in which the *Cirrostratus* on the whole predominated: the lower surface of these clouds put on fine crimson and grey tints at sun-set, and the lights formed by the moon shining through them, were peculiarly soft and pleasing. 25. Cloudy, a. m.: small rain: the wind gentle, veering to S: it rained much of the day at intervals: afterwards appeared groups consisting of *Cumulostratus* and *Cirrocumulus,* with *Nimbi:* hazy moonlight. 26. *Cirrostratus* in the morning: then *Nimbus,* and some rain: the wind gone back to SE, and moderate: many sudden showers of small amount from ill-defined clouds amidst haze: a bow soon after three, p. m.: windy night. 27. Fine morning: much dew: calm: *Cumulostratus* tending to *Cirrocumulus* above: some rain at mid-day. 28. Fine morning: *Cumulus* passed to *Cumulostratus:* a very few drops fell, p. m.: and there followed wind, succeeded by calm, with *Cirrostratus* and haze: rain in the night. 29. Fair: brisk wind, with various clouds. 30. A veil of *Cirrostratus* in flocks, a. m., with this, *Cumulus* rapidly inosculating formed *Cumulostratus,* which was heavy through the day: in the evening much *Cirrostratus,* succeeded by small rain: in the night a heavy shower. 31. Fine, with *Cumuli,* carried by a strong breeze.

Ninth Mo. 1. Misty morning, with *Cirrostratus* above, to which succeeded *Cumulostratus.* 2. Fine morning: wind NE, with *Cirrostratus,* which gave place to *Cumulus:* the evening was overcast; as for rain, but little or none fell, and in the night there was a most copious fall of dew.

RESULTS.

Winds Westerly, save twice about the last quarter of the moon, when they became Easterly.

Barometer:	Greatest height .	30·05 in.	[By Clock 30·10 in.]
	Least . . .	28·90 in.	[.. 28·89 in.]
	Mean of the period	29·63 in.	[.. 29·681 in.]
Thermometer:	Greatest height .	75°	
	Least . . .	34°	
	Mean of the period	57·65°	[Lab$^{y\cdot}$ 58·36 in.]
Mean of the hygrometer .		52·3°	
Rain		2·13 in.	[Lab$^{y\cdot}$ 1·67 in.]

In the present, as in the last Lunar period, the reader will observe that the Last quarter, both in going off, and in approaching again, is dry: while the other three phases have the rain divided among them.

Meteor.

" *Tunbridge Wells,* 6*th August.*—Being out about midnight, and the sky being remarkably clear, wind SW, therm. 49°, I saw in the WSW a brilliant meteor, almost half the apparent bigness of the moon: it began at about 45° or 50° of altitude, and slowly descended, increasing in size: it might perhaps be near ten seconds in falling: the colour of the flame was white till near its extinction, when it was bright blue, tinged with reddish at the top. The day previous had been fair, with regular *Cumuli*, evaporating in the evening, and scarcely any other modification discernible all day. The day following had *Cirrus* passing to *Cirrocumulus* all the morning, with a south wind. T. F.

ATMOSPHERIC ELECTRICITY.

On the 16th of the Eighth Month, being at Tonbridge Wells, I raised a pretty large kite, made of linen stretched upon two pieces of cane, and fitted with a separate conducting string, as described in the *Introduction* to this work, which being kept up at different elevations, for several hours in the afternoon, the following phenomena were remarked.

About noon, with a moderate breeze at SW, while the sky was clear, or only covered by light *Cirrus* passing to *Cirrocumulus* and *Cirrostratus*, the apparatus gave only weak and moderate sparks, which were of positive electricity. But when, after this, some obscurity had begun to appear in the sky to windward, (the wind veering to S,) and the rudiments of *Cumuli*, formed in a lower region, passed our zenith, the very first of these slight masses occasioned sparks attended with a sensation that reached to the elbows: a larger body of the same cloud soon after arriving, we received shocks extending quite to the feet, and too severe to be repeated often. At this time my son perceived a hissing noise, which seemed to attend the flying off of electricity from the reel: the sparks also became visible in full daylight, and a few drops of rain, from the skirt of a shower forming to windward, did not at all abate the charge. It was observed, however, by Dr. Forster, who was left with the apparatus between two and three p. m., that a cold breeze, which preceded a cloud bringing a shower, entirely took off the charge for a time. At three p. m. the shower becoming too heavy to permit us to continue the experiment satisfactorily, the *bearing* string of the kite was lowered, until the *conducting* thread touched the ground, and in this situation of the two strings the kite was taken in, without our sustaining the repeated shocks which would probably have been encountered in that operation, in the common mode of raising it with a single string.

During the experiment the barometer was falling from about 29·40 to 29·30 in.: and the temperature at the close was 58°. The sky, after the shower, was obscured by a double veil of *Cirrostratus*, and there fell more rain about half-past five p. m. We observed no *negative* charge on this occasion.

It is remarkable that the *Leyden phial* cannot be charged, beyond a certain weak degree of intensity, at the string of a kite: the charge is acquired by a single spark, and the person holding the phial is shocked by that and by each succeeding contact. It seems that the electric fluid passes (if I may be allowed the expression) with a *greater momentum,* when it has to glide down from a long elevated conductor, than when it is received by approach to a body insulated near the surface of the earth. I am aware, however, that the principles of electricity may supply a different explanation of this singular fact.

THE HONEY BEE.

[While at Tunbridge Wells with my family, I had opportunity fully to ascertain, (what I had before suspected,) that the Honey Bee is guided in its excursions by certain marks observed at short distances, on the way along which it passes. Near the Toad Rock there is a little valley, in which lives a cottager who keeps bees. At the top of the glen, on a level with the common, lay a small flat rock. Over this piece of stone I have repeatedly watched the bees passing, as they came laden from different parts of the heath, making it the last point of departure on their homeward voyage; and after coming, as it were out of their way, to visit this stone, proceeding with a direct flight to the cottage.]

TABLE CXXXV.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 9 mo. Sept. 3	SE	29·96	29·79	30·00	29·87	75°	53°	65	
4	Var.	30·10	29·96	30·20	30·00	69	43	63	
5	Var.	30·10	30·03	30·20	30·10	73	46	60	
6	Var.	30·03	30·00	30·13	30·09	63	47	59	
7	SE	30·03	29·91	30·13	29·97	71	44	60	
8	E	30·07	29·94	30·00	29·90	76	47	58	
9	NE	29·96	29·94	30·08	30·00	66	54	63	
10	N	29·97	29·92	30·03	29·97	65	50	59	
11	NE	29·92	29·87	30·05	29·93	68	49	65	
12	Var.	29·93	29·80	30·00	29·86	68	49	62	—
13	SE	29·93	29·85	30·00	29·89	66	53	56	—
14	NE	29·93	29·83	30·01	29·89	63	56	63	17
15	NE	29·98	29·93	30·09	30·01	66	60	64	
16	SE	29·98	29·94	30·09	30·00	72	51	63	
17	NE	29·94	29·61	30·00	29·65	70	54	60	
18	N	29·76	29·56	29·80	29·61	62	55	62	4
19	W	29·95	29·76	30·04	29·80	67	47	57	
20	NW	29·95	29·91	30·06	29·99	64	55	53	
21	NE	29·91	29·83	29·99	29·87	63	42	61	
22	NE	29·83	29·80	29·88	29·82	59	47	53	
23	NE	29·90	29·80	29·97	29·85	64	47	52	
24	SE	29·90	29·52	29·97	29·57	66	47	51	
25	SW	29·52	29·16	29·57	29·28	64	55	65	—
26	SW	29·31	29·16	29·38	29·28	60	47	58	20
27	SW	29·65	29·31	29·70	29·34	58	44	48	7
28	W	29·95	29·65	30·00	29·70	59	33	55	
29	NW	29·95	29·89	30·01	29·90	58	43	54	
30	NE	29·89	29·75	29·97	29·80	55	42	53	
10th mo. Oct. 1	NW	30·02	29·75	30·04	29·73	56	30	57	
2	W	30·05	30·02	30·12	30·04	46	24	48	
		30·10	29·16	30·20	29·28	76	24	58	0·48

Notes.—Ninth Mo. 3. Much dew: very fine day, with *Cirrus* only, in horizontal striæ: temp. 72° after sun-set. 4. Dew: fine morning· *Cirrocumulus*, followed by cloudiness from S, about nine: clear afterwards, save a line of low thunder clouds in the NE. 5. Fine, after misty morning: large *Cumuli:* at night the floating dust and smoke assumed the horizontal arrangement usual before the *Stratus.* 6. Misty morning: afterwards large plumose *Cirri,* passing to *Cirrocumulus:* p. m. some delicate streaks of *Cirrostratus,* with two currents near the earth at sun-set, SW above E. 7. Serene day, after misty morning: a very luminous, yellowish, evening twilight, with crimson streaks of *Cirrocumulus*, and a dewy haze round the horizon. 8. As yesterday, with *Cirri*, finely tinted in orange at sun-set. 9. Overcast, a. m.: at sun-set, *Cirrostrati* from SE. 10. Overcast morning: then *Cumuli*, with an electrical character: a fine breeze these three days. 11. Calm misty morning: then lightly clouded till evening. 12. Misty morning: after a little rain, the sky exhibited a veil of clouds moving from the SW. 13. *Cumulostratus* through the day. 14. Rain very early: temp. 63° at nine, a. m.: mild and damp air. 15. Cloudy, close, damp, day and night. 16. Overcast with a breeze. 17. Misty morning: then sunshine and flying clouds. 18. Slight showers, with wind. 19. Cloudy morning: luminous evening twilight, orange, with rose colour above. 20. Clear dewy morning: the temp. scarcely varied from 55° through the night: *Cumulus*. 21—23. Fine, with breeze pretty strong, and various clouds. 24. The lateral approach from the southward of the westerly current was indicated to-day by the southing of the wind, by heavy *Cumuli* and *Cumulostrati* in the SE, and by a lurid haze, with greenish streaks of *Cirrostratus*, before the moon. 25. A gale from SW, with light rain: in the evening a lunar corona with *Nimbus:* heavier showers in the night. 26. Showery morning: then *Cumuli*, carried in a fine blue sky: evening showery: night windy. 27. Wind and showers. 28. The morning gradually cleared up, with *Cirrostratus* passing to *Cirrocumulus*, and some very elevated *Cirri:* at sun-set these showed red, stretching SW and NE. 29, 30. The wind, after going to SW for a short time, came round by N to NE, with fine weather.

Tenth Mo. 1. Fine: very red *Cirri* at sun-set. 2. Hoar frost, with ice.

RESULTS.

Winds Easterly, interrupted after the full moon by a gale from the westward.

Barometer: Greatest height	30·10 in.	[By Clock 30·20 in.]
Least	29·16 in.	[.. 29·28 in.]
Mean of the period	29·842 in.	[.. 29·905 in.]
Thermometer: Greatest height	76°	
Least	24°	
Mean of the period	55·76°	[Lab^{y}· 56·35°]
Mean of the hygrometer	58°	
Rain	0·48 in.	[Lab^{y}· 0·56 in.]

We have here, for the third time in the space of three months, a striking relation between the occurrence of rain, and the times of the Moon's being in opposition and conjunction: but in the present case the rain followed instead of preceding or accompanying those phases. The Last Quarter is dry, as in the two periods before; and the First nearly so.

TABLE CXXXVI.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 10 mo. Oct. 3	NE	30·14	30·05	30·20	30·07	50°	32°	65	
4	NE	30·22	30·14	30·27	30·20	57	32	55	
5	NE	30·25	30·22	30·30	30·26	56	33	56	
6	NE	30·25	30·10	30·27	30·16	54	39	55	
7	E	30·10	30·06	30·17	30·12	54	43	51	
8	NE	30·06	29·95	30·12	29·98	54	35	46	
9	NE	29·95	29·87	29·98	29·88	53	39	59	
10	N	29·92	29·86	29·92	29·88	56	41	56	
11	NE	29·99	29·92	30·02	29·92	50	36	54	—
12	N	30·15	29·99	30·20	30·00	52	35	55	5
13	NE	30·22	30·17	30·30	30·20	52	32	59	—
14	N	30·22	30·02	30·25	30·05	50	42	64	—
15	NW	30·02	29·80	30·05	29·80	48	37	64	6
16	NE	30·05	29·80	30·10	29·80	48	36	60	30
17	NE	30·05	29·86	30·10	29·90	48	37	59	5
18	E	29·87	29·77	29·90	29·80	45	37	54	17
19	N	29·91	29·87	29·90	29·87	45	42	62	
20	N	29·89	29·85	29·93	29·86	48	40	64	3
21	E	29·79	29·77	29·86	29·78	52	39	65	
22	N	29·90	29·79	29·92	29·79	48	36	65	
23	NE	29·90	29·88	29·92	29·88	50	40	63	—
24	NE	29·88	29·81	29·90	29·80	46	38	65	4
25	SE	29·81	29·71	29·81	29·72	50	37	65	
26	S	29·69	29·65	29·72	29·65	52	28		
27	SW	29·43	29·32	29·65	29·30	49	32		12
28	SW	29·41	29·39	89·44	29·36	48	32		16
29	SW	29·55	29·21	29·57	29·25	49	27		8
30	S	29·49	29·14	30·55	29·15	57	42		21
31	S	30·25	29·46	30·28	29·42	52	28		7
11 mo. Nov. 1	Var.	30·34	30·16	30·40	30·20	49	27		
		30·34	29·14	30·40	29·15	57	27		1·34

Tenth Hoar frost, with ice. 4. A strong breeze: clear
rain . p.m. tending to SE, with *Cumuli*. 5. The same
eeze *lus*, succeeded by *Cumulostratus*, which became
avy hen the smoke of the city, being drawn up in a
dun , mingled with the clouds, and gave occasion (as it
ope cal shower: it drizzled a little with us, and there
vas ds beneath dewy haze in the NE at sun-set. 6, 7.
Son lly by night: *Cumulostratus*. 8. *Cumulus*, &c.:
win *tus*: windy: SE, p. m. 10. *Cumulostratus*,
wea n excessive rising of the dust in the evening.
1 with fleecy *Cumulus* and *Cirrostratus*: a

little rain, mid-day: very fine orange twilight. 12. As yesterday: slight showers by inosculation of different clouds: the product of the rain-guage includes much dew. 13. A strong breeze, NNE, a. m.: some drizzling rain: twilight fainter orange. 14. Misty morning: a little drizzling, p. m. 15. Some rain, mid-day and evening. 16. Wind got back to NE, and fresh, a. m.: rainbow at eleven: wet, mid-day: then cloudy. 17. Showers, with hail, about noon. 18. Cloudy: wind fresh, going first to NW, then back to E: showers. 19. Temp. 45° at nine, a. m.: dark and cloudy through the day. 20. Gloomy: misty: but little wind. 21. The same. 22. Lighter sky: wind to SE, and at night back to N. 23. Wind brisk at NNE, with a lofty sky: a shower, p. m. 24. Drizzling: dark, a. m. 26. Fair: *Cumulus*, with *Cirrocumulus* and *Cirrostratus:* the moon rose gold-coloured: a clear night ensued. 27. Misty morning: rain, with wind, at night. 28. Misty: the trees dripping: the wind to S, then back to SW, with pretty heavy rain. 29—31. After a moderate gale from the southward, the barometer rose rapidly, with squalls of wind, showers, and hoar frost.

Eleventh Mo. 1. Very fine day: misty at night, probably from a *Stratus*.

RESULTS.

The wind, which was chiefly from the NE to the time of the Full moon, came round afterwards (as in the last period) to the SW, for a few days only.

Barometer:	Greatest height .	30·34 in.	[By Clock 30·40 in.]
	Least . . .	29·14 in.	[.. 29·15 in.]
	Mean of the period	29·881 in.	[.. 29·934 in.]
Thermometer:	Greatest height .	57°	
	Least . . .	27°	
	Mean of the period	43·27°	[Lab^{y}· 44·03°]
	Rain . . .	1·34 in.	[.. 1·84 in.]

The hygrometer having been out of order, the latter week's observations on it are uncertain. I found the *evaporation* to proceed of late in the following ratio, viz.:—

In eight days preceding the 3d of 10th month .	0·42 in.
In seven days preceding the 10th . . .	0·37
In seven days preceding the 17th . . .	0·22
In eight days preceding the 25th . . .	0·10
In eight days to the close of the period (with considerably more wind stirring) . . .	0·12

The capacity of the air for water has, therefore, decreased more rapidly than the daily mean temperature, the approaching change of the winds [to *southerly*] being the probable cause.

HURRICANE IN THE WEST INDIES.

A Hurricane raged in the West India islands on the 21st of the Tenth month, which is thought to have been more destructive than any since the year 1780. Its ravages appear to have extended in

[illegible] to the 18th degree of north latitude,
[illegible] principally the islands of Dominica, Martinique,
[illegible] Vincent; and, in a degree, Barbadoes, which lay
[illegible] to the storm. The wind is stated to have
[illegible] from the NW, and to have raged with tremendous
[illegible] falls of rain until three in the afternoon,
[illegible] it abated, but did not immediately cease.
[illegible] government house and barracks were blown down
[illegible] in the ruins; the crops and forests, in short
[illegible] island, desolated, and every vessel in the port
[illegible] numerous documents inserted in the papers
[illegible], may be suitably presented to the reader as
[illegible] tremendous visitations.

OFFICIAL.

[illegible] on this lamentable occasion was addressed by the Colonial
[illegible] the Governor of Barbadoes:—

"*St. Lucia*, *Oct.* 23, 1817.

[illegible] Excellency Major General Seymour being unable to address
[illegible] consequence of the very serious injury he received during the
[illegible], (and, I am sorry to add, very little hopes are en-
[illegible] his Excellency has directed me to give your Lord-
[illegible] earnestly to entreat your Lordship's assistance and
[illegible] the situation of the unfortunate inhabitants of this
[illegible] has suffered severely thereby.

[illegible] a negro house is left standing: the mills and out-
[illegible] razed to the ground; nearly the whole crop of canes
[illegible] the face of the island, which was luxuriant on the 20th,
[illegible] of an European winter.

[illegible] is nearly in ruins, and the vessels, about twelve sail,
[illegible] which is expected to be saved. The whole of the build-
[illegible] Pigeon island were blown down, with the exception
[illegible]

[illegible] family were taken from under the ruins of his resi-
[illegible] quarters,) where he remained in the hope that it
[illegible]; but he has, unfortunately, suffered for his impru-
[illegible]

[illegible] my Lord, your Lordship's most obedient Servant,
"L. R. Baines, Colonial Secretary."

[illegible] above, I am sorry to acquaint your Lordship, that
[illegible] that General Seymour cannot pass forty-eight
[illegible]

[illegible] Pierre, *Martinique*, *dated November* 10, 1817.—"On
[illegible] colony was visited by the most furious hurricane ever
[illegible] this sad disaster would be equally long and painful.
[illegible] hundred lives, twenty-five thousand hhds. of sugar
[illegible], incalculable losses in buildings, animals, and the
[illegible] occasioned a general desolation, independently of the
[illegible]-tenths of the shipping, which were in different
[illegible] wrecked, damaged, or missing. St. Lucia and
[illegible]; the tempest reached also St. Vincent's and
[illegible] to Guadaloupe, as well as Porto Rico and
[illegible] less degree. The loss experienced by Mar-
[illegible] calculated at 25,000,000 of francs, exclu-
[illegible] buildings of entire parishes were razed
[illegible] hours, twelve of which with such inconceiv-
[illegible], and to destroy buildings which had
[illegible] require many years before the colony
[illegible]."

A Letter from an Officer on board His Majesty's ship Antelope, at St. Kitt's, dated Nov. 12, *says*:—"We were lying at St. Lucie quietly at anchor, only the day before the hurricane came on, and got under sail for Barbadoes (as was our intention) about seven in the morning of the 20th, it being fine weather. At twelve o'clock the night following the officer of the watch hailed the master, and said the wind had come round to the north-west, which was very unusual in this country, where easterly winds prevail all the year through, and that the weather appeared to be coming on bad; and the Admiral and Captain were immediately upon deck; we took in all our sails except the fore-sail, which was reefed; got the top-gallant-masts upon deck, and prepared for the worst. At three in the morning of the 21st instant, it blew very hard at west, with tremendous heavy rain; at four still harder: took in our fore-sail, and brought her to under a try-sail, double reefed; at seven yet harder, when a sea came and washed away one of our boats from the stern. When ten o'clock came it blew a perfect hurricane beyond what any of us had ever witnessed; however, the ship lay very quiet and behaved very well, but from the heaviness and quantity of rain, with the immense force of wind, all our cabins were full of water. At noon the weather abated, and at three in the afternoon it became quite moderate, when we set our sails again.—We visited St. Lucie sixteen days afterwards, and the scene was such as my pen cannot describe: many of the inhabitants lost their clothes, and those who are sick, are lying on the ground with no other covering than the sky, exposed to sun and rain.

Extract of a Letter from an Officer on board one of His Majesty's ships, dated *Barbadoes, November* 30, 1817;—

"On our first making the Island (St. Lucie) we were struck with astonishment at the total change in the whole face of the country. We left it the day before the hurricane a beautiful rich green, and every thing in a most flourishing state. It has now the appearance of a severe European winter. We went on shore on the 7th of November; the scene of destruction which then presented itself is far beyond my power of description. On Pigeon Island, three houses only are left standing out of nearly two hundred and fifty, the rest, with the church, are almost totally demolished; one of the three is shifted fifteen feet off its foundation, without going to pieces. The two large tamarind trees, under which the Negroes always met to dance on Saturday and Sunday evenings, were torn up by the roots, which by their spread in this rather sandy soil, nearly equal the branches in circumference. The woods with which this island particularly abounds are more or less scattered, according to their exposure to the gale; many of the trees which are left standing have only a few of the ragged, stout branches remaining. In the deep ravines the wind appears to have acted in a whirl; for immense trees are completely thrown down and twisted up in heaps in a most astonishing manner. The inhabitants tell us the great hurricane in 1780 was not equal to this."—*Pub. Ledger.*

From the India Gazette.

BOMBAY, *October* 20, 1817.—Until yesterday the rain has continued, during the last week, to come down almost without intermission: the quantity which has fallen in this monsoon is uncommonly great, the accounts taken by different rain guages give upwards of ninety-five inches since the 2d June, being above a fourth more than the average fall of former years. The weather has now cleared up, with every appearance of continuing fair and hot."

The following is an Extract of a letter from ST. PETERSBURGH.

"Advices from Georgia of the 13th ult. state, that on the 21st of October, an immense avalanche fell from the mountain of Kasbeck, and covered an extent of three wersts in length, to the height of fifty fathoms. It completely dammed up the rapid river of Tereck; which, however, on the third day, worked a passage for itself underneath the mass of snow. This accident for some time interrupted the communication with Georgia. Fortunately, there were no travellers passing when it happened. Nine years have elapsed since the last avalanche occurred: though, according to the reports of the inhabitants, they generally take place once in seven years, and in the summer."—*Pub. Ledger, Jan.* 14.

TABLE CXXXVII.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 11mo. Nov. 2	S	30·19	30·11	30·24	30·17	57°	41°		
3	SE	30·10	30·06	30·25	30·10	54	49		
4	SE	30·06	29·91	30·10	29·95	55	45		
5	SE	29·88	29·85	29·95	29·89	54	44		
6	S	29·85	29·69	29·93	29·71	55	49		6
7	SW	29·69	29·43	29·71	29·44	58	50		13
8	SW	29·61	29·35	29·60	29·37	55	44		5
9	W	29·90	29·61	29·97	29·60	51	40	63	
10	SW	29·89	29·66	29·98	29·73	55	44	95	
11	SE	29·70	29·68	29·75	29·65	52	38	62	14
12	SW	29·73	29·49	29·78	29·52	55	38	100	2
13	SE	29·73	29·48	29·80	29·50	52	38	70	—
14	SE	29·48	29·26	29·50	29·26	54	49	86	76
15	W	29·79	29·26	29·90	29·26	55	40	80	10
16	SW	30·15	29·79	30·20	29·90	54	39		
17	SW	30·17	30·16	30·25	30·20	59	50	83	
18	W	30·38	30·16	30·46	30·21	57	35	67	
19	NW	30·45	30·43	30·50	30·46	49	30	85	
20	SW	30·43	29·87	30·48	29·90	46	38	96	
21	N	30·12	29·87	30·15	29·81	52	37	72	
22	NW	30·12	30·05	30·22	30·10	47	37	73	
23	W	30·05	29·82	30·12	29·83	46	41	65	
24	W	29·78	29·70	29·83	29·70	49	32	71	—
25	W	30·00	29·78	30·07	29·76	44	34	64	15
26	NW	30·07	30·00	30·13	30·01	52	40	78	
27	SW	30·08	30·06	30·15	30·11	51	37	65	
28	SW	30·06	29·92	30·13	29·95	49	40	67	
29	SW	29·93	29·87	29·95	29·90	54	49	78	3
30	SW	29·87	29·79	29·97	29·80	54	52	79	5
12th mo. Dec. 1	SW	29·79	29·54	29·81	29·57	54	46	80	51
		30·45	29·26	30·50	29·26	59	30	76	2·00

N eventh Mo. 2 to 4. Nearly calm: dripping mists, with
ity by *Cirrostratus*, and sunshine. 5. A slight shower
gale at SW: showers by night. 8. Squally: several
day. 9. Windy, fine, with *Cumulus*, *Cirrus*, and
0. Misty morning: *Cirrus*, *Cirrostratus*: fair day:
11. Fine morning: then quickly overcast and wet,
sur en *Cirrostratus*, speedily general: cloudy
13. Fine morning, with *Cirrostratus*
14. Much *Cirrostratus* in the morning:

rain by half-past nine: fair evening. 15. Wet, gloomy morning: calm and lighter mid-day: p. m. the wind went to W, and blew strong: clear night. 16. Coloured *Cirri* with *Cirrostratus* at sun-rise: misty: steady breeze, with some appearance of distant rain: cloudy evening. 17. Fair: somewhat windy night. 18. Fair: *snow* fell within a few miles of us: evening twilight luminous and orange-coloured. 19. *Cirrocumulus, Cirrus,* and *Cirrostratus:* abundant dew on the grass all day: very fine sky. 20. Very misty, a. m.: the trees drip much: fine, p. m. with dew and large *Cirri.* 21. Cloudy: rather windy: little or no dew this morning: *Cirrostratus, Cumulus:* the wind got to N at night. 22. Fair *Cirri* in lofty bars, stretching N and S, followed by *Cirrocumulus,* and a group of clouds among the smoke of the city. 23. Fine, clear morning: grey sky after. 24. *Cirrostratus* with *Cirrus,* at sun-rise: a little light rain, p. m.: lunar corona, followed by a large faint halo. 25. Hoar frost: a steady gale through the day, with an appearance of *Nimbi* in the NW: rain after sun-set. 26—28. Fair: somewhat windy, with *Cirrostratus,* &c. 29. The hygrometer stood at 78° till noon: a little rain fell, a. m. and at night: the bees came out in considerable numbers, continuing however about the hive. 30. Overcast, windy: the maximum temp. at nine, a. m. or rather, the whole 24 hours warm alike.

Twelfth Mo. 1. A wet day.

RESULTS.

Winds Southerly and Westerly.

Barometer:	Greatest height .	30·45 in.	[By Clock 30·50 in.]
	Least . . .	29·26 in.	[.. 29·26 in.]
	Mean of the period	29·878 in.	[.. 29·92 in.]
Thermometer:	Greatest height .	59°	
	Least . . .	30°	
	Mean of the period	47·11°	[Lab^{y}. 48·41°]
Mean of the hygrometer .		76°	
Rain		2 in.	[Lab^{y}. 1·27 in.]

Evaporation, 1·02 inch, divided as follows: to the 9th, 0·27; to the 15th, 0·40; to the 23d, 0·23; to the end, 0·12.

The *mean temperature* of this period instead of falling some degrees, (as might have been expected from the season,) is near 4° higher than that of the last. But in the Tenth month it had undergone a disproportionate depression of 12½ degrees, (as will appear on comparing together the results of Tab. 135 and 136) for which the present warmth may be considered as a compensation.

The Rain appears now to be quitting the vicinity of the times of New and Full Moon, and attaching itself to the quarters. Yet the space of three or four days following the Last Quarter is dry, as it has been in four successive periods since the Summer solstice. It will be found however, on examining the Tables, both forward and backward, that this portion of the Lunar period is subject at times to heavy rain.

TABLE CXXXVIII.

1817.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 12 mo. Dec. 2	NW	29·45	29·43	29·57	29·46	47°	29°	71	2
3	NE	29·86	29·40	29·90	29·42	41	28	78	5
4	E	29·87	29·71	29·92	29·80	42	29	83	
5	S	29·87	29·37	29·80	29·33	47	38	69	27
6	NW	29·38	29·37	29·41	29·35	41	28	83	
7	SW	29·37	28·61	29·38	28·56	42	32	92	13
8	Var.	29·07	28·54	29·00	29·43	45	36	85	48
9	NW	29·22	29·07	29·21	29·00	43	28	69	
10	NE	29·51	29·22	29·52	29·21	35	21	73	—
11	Var.	29·67	29·51	29·66	29·52	32	18	80	
12	SE	29·67	29·61	29·73	29·60	37	23	83	—
13	SE	29·61	29·48	29·63	29·50	40	35	85	40
14	SE	29·57	29·34	29·50	29·37	48	32	98	24
15	SW	29·80	29·57	29·85	29·50	43	34	97	72
16	SW	29·53	29·30	29·87	29·31	50	35	96	32
17	SW	29·53	28·88	29·67	28·85	48	35	74	67
18	SW	28·88	28·74	28·86	28·70	48	34	65	2
19	Var.	29·30	28·88	29·30	28·68	46	39	76	15
20	NE	29·56	29·50	29·61	29·30	40	27		
21	NE	29·50	29·44	29·52	29·46	33	28		
22	N	29·53	29·46	29·55	29·46	33	29	74	
23	SE	29·65	29·48	29·80	29·55	32	20	65	
24	NE	29·90	29·65	30·15	29·80	32	24	80	
25	NE	30·06	29·90	30·28	30·15	33	22	78	
26	Var.	30·08	29·80	30·30	29·94	36	22	77	10
27	SW	29·62	29·45	29·94	29·61	37	32	92	5
28	NW	30·10	29·62	30·32	29·94	38	21	72	
29	SW	30·10	29·97	30·33	30·15	33	23	65	
30	Var.	30·00	29·93	30·20	30·10	40	22		6
31	NE	30·01	30·00	30·20	30·16	35	21	93	
		30·10	28·54	30·33	28·68	48	18	78	3·68

NOTES.—Twelfth month. 2. Some rain, a. m. 3. Hoar frost; *Cirrostratus;* the sky quickly overcast: some sudden showers followed: in the evening *Nimbi,* the wind going to the NE with force. 4. Hoar frost: fine, with *Cirrostratus:* misty p. m.: windy night. 5. Very cloudy, a. m.: a gale in the night, followed by rain. 6. Overcast, a. m.: fine and calm mid-day: *Cirrocumulus.* 7. Hoar frost: *Cirrostratus,* with a stormy appearance, a. m.: fine, p. m.: rain, with a gale of wind, in the night. 8. *Cirrostratus* at sun-rise, the wind gone down: wet at intervals: *Nimbi:* much wind again at night. 9. Cloudy, a. m.: about noon *Cirrostratus,* and after it *Cirri* in elevated bars stretching N and S, coloured red at sun-set: starlight, with small meteors. 10. Snowing by nine, a. m.: at eleven the ground was white, when it ceased: clear night. 11. The sun emerged from *Cirrostrati:* rather misty air: the wind gentle at SW. a. m.: but easterly in the night. 12, a. m. Vane at SW: calm: much rime, with a misty air till evening: a thaw in the night. 13. Obscure by *Cirrostratus,* a. m.: the hygrometer proceeding towards moisture: rain, gentle in the day, heavier, with wind, in the night. 14. *Cirrostratus* prevailed in a uniform close canopy about the height of the neighbouring hills, on which I found it misty in consequence, while small rain fell below: early in the night came on wind, with showers. A perfect, but colourless *lunar bow,* was observed about ten, p. m. and reported to me by a gentleman whom I met at Stamford Hill in the morning. 15. Hoar frost: the sun emerged from a low *Cirrostratus:* very wet, p. m. and night. 16. Wet, a. m.: in the night a heavy gale, ceasing about three. 17. Fair, a. m.: obscure afterwards by *Cirrostratus:* in the night a most violent westerly gale, increasing and decreasing in force by slow intervals, with much rain. 18. Windy: bright moonlight. 19. Wet, p. m. 20. The wind got to NE, a fresh breeze, but at night the clouds came from NW. There was a manifest attraction between the low clouds and the smoke of London. 21. Fair; the clouds tending to *Cumulostratus.* 22. A very slight sprinkling of snow, crystallized in stars. 25. The same, in grains as fine as basket salt. 26. Orange-coloured sun-rise, with red *Cirri:* hoar frost: a lunar corona last night, surrounded by a coloured halo. 27. After a fine dry frost for some days, a thaw early this morning, with rain: in the night a gale, with showers, after which a ground-frost. 28. A little snow at mid-day: the temp. 19° on the ground at night. 30. Wet, p. m. 31. A frozen mist came on at eight, a. m. from the southward; and after a clearer interval there was again a very thick fog in the evening.

RESULTS.

Winds variable.

Barometer:	Greatest height	30·10 in.	[By Clock 30·33 in.]
	Least	28·54 in.	[.. 28·68 in.]
	Mean of the period	29·508 in.	[.. 29·586 in.]
Thermometer:	Greatest height	48°	
	Least	18°	
	Mean of the period	34·05°	[Lab^{y}· 35·11°]
Mean of the hygrometer		78°	
	Rain	3·68 in.	[Lab^{y}· 3·57 in.]
	Evaporation	0·38 in.	

[I have inserted in the twelve periods comprehended in this year the *Rain* at the Laboratory, Stratford, distant six miles from Tottenham. It will enable the reader to see how the excess in one place, at one time, is compensated by an excess at the other on another occasion; so that upon the whole year, (of which the first nine days are wanting in the detail,) the quantities are, for Tottenham, 24·77 in.; for Stratford, 25·39 in.]

LARGE METEOR.

"On the morning of the 8th inst" (Dec.) says the observer, who dates from Ipswich, "I was looking at Mars, whose position is near to the star in the bull's northern horn. About midway between the horns I suddenly perceived a fiery body resembling a red-hot ball of iron, four or five inches in diameter, which having passed three or four degrees in a direction between the principal stars of Capella and Canis minor, burst into a spherical body of white light nearly as large as the full moon, of so great a lustre as scarce to be borne by the eye, throwing out a tail about three degrees in length of a beautiful rose colour, tinged round the edges with blue. It thus proceeded in its course without apparent diminution towards the principal star in the head of Hydra, (very near to the ecliptic,) a little beyond which it suddenly disappeared (I believe) with an explosion; as I distinctly heard a rumbling noise like that of a cannon discharged at a distance, about ten or twelve seconds afterwards. Its duration, as nearly as I can estimate, was about five seconds, during which it traversed a space of nearly sixty degrees. It is scarcely possible to give an adequate description of the vivid splendour which characterized this extraordinary phænomenon. It cast a light around equal to the noonday's sun: I could compare it to nothing so well as the beautiful dazzling light exhibited by the combustion of phosphorus in oxygen gas; its effect upon the organs of light being analogous. The barometer was falling at the time, and in the course of the night fell altogether an inch and one tenth; the thermometer at 42°. Within a quarter of an hour afterwards the atmosphere became entirely obscured by clouds; violent tempests of wind and rain succeeding, although the stars were previously visible and the zenith free from vapours." J. A.—*Philo. Magazine.*

The most remarkable circumstance in this account is, that the eye of the spectator having been favourably directed at the moment, he had an opportunity of seeing (what I believe is very seldom witnessed) the *beginning incandescence* of one of these bodies, and of tracing its motion before it had become completely ignited. Leaving for a future occasion any general reasoning which might be founded on this, I may observe that as these meteors are not *necessarily* very elevated or very distant, the appearance of the present one *may* have had some connexion with the low Barometer, the supervening cold current, and the copious precipitation of water, which we find registered upon and subsequently to the day of its appearance. It may be remarked also that *small meteors* were sufficiently frequent on the following evening, to induce me to note their occurrence.

GALES OF WIND AND THUNDER STORMS.

The storm which raged in the night between the 7th and 8th of December, destroyed in the Channel twenty vessels from the coast of Brest to St. Maloes.

Falmouth, Dec. 8.—It has blown all day a hurricane, from W to NW, and still continues with unabated violence.

A dreadful storm was felt in the Bay of Biscay on the 9th, 10th, and 11th December.

We fear we shall receive more distressing accounts of the damage done on our coasts by the severe gales which have blown since the beginning of the present month. Last Sunday night, and on Monday, (Dec. 14—15,) there was another storm; and the agent to Lloyd's, at *Poole*, represents it as most tremendous. It was accompanied with the most awful thunder and lightning.

A *Whitehaven* paper says—The weather in the course of the last week, has proved the most tempestuous that has been experienced in this part of the country for a long time past.—On the night of Monday, the 15th Dec. we had one of the most tremendous thunder-storms perhaps ever known in this part of the kingdom. Its greatest violence was between the hours of nine and ten. The peals were awfully loud, and the lightning astonishingly vivid and frequent.

The *Hull Advertiser* of the 20th Dec. says—On the nights of the 16th and 17th, this town and neighbourhood were visited by a most violent gale of wind, attended with heavy rain, of the effects of which in some parts of the country the accounts are very distressing.

Jersey, Dec. 19.—For some days past, perpetual storms, attended with heavy rain, mixed with hail, have prevailed here, wind varying from N to NW, W and SW.—*Papers.*

City Fogs.

The fog of Wednesday (Dec. 31) seems to have been confined to the Metropolis and the immediate vicinity. No further to the Northward than the back of Euston-square, the weather was clear and even bright. A gentleman, who came to town from Enfield, saw no fog till he approached London. Southward of London, it extended as far as Clapham, and it was rather thicker in some of the environs, than in the metropolis itself. Upon an average, ten feet was the distance at which objects became invisible, out of doors. Within doors it was impossible to read without a candle.

The following peragraph from *The Freeman's Journal* of January 1, shows, that the fog on Wednesday last was as thick in Dublin as in London:—The oldest person living has no recollection of a fog so thick as the one which enveloped this city last evening, between the hours of six and nine. It was more dense in some streets than in others, and where this was the case it was impossible to pass with convenience without the aid of opened lanterns.—*Pub. Ledger.*

TABLE CXXXIX.

1818.	Wind.	Pressure. Max.	Pressure. Min.	By Clock. Max.	By Clock. Min.	Temp. Max.	Temp. Min.	Hygr. at 9 a. m.	Rain, &c.
1st mo. Jan. 1		30·01	29·96	30·03	29·90	33°	21°	90	
2	SE	29·96	29·58	29·90	29·55	33	31	80	
3	SE	29·58	29·43	29·55	29·40	40	32	75	13
4	S	29·64	29·48	29·64	29·40	44	32	100	—
5	Var.	29·90	29·48	29·90	29·32	42	28	80	51
6	SW	30·15	30·10	30·20	29·90	41	29	85	
7	SW	30·03	29·82	30·12	29·82	47	36		17
8	NW	30·18	30·05	30·23	30·00	41	29	58	
9	SW	29·85	29·76	30·07	29·77	48	39	83	11
10	SW	29·75	29·72	29·77	29·72	52	47	93	3
11	NW	29·76	29·50	29·70	29·50	49	36	80	9
12	SW	29·92	29·78	30·05	29·70	47	37	60	3
13	SW	29·85	29·79	29·94	29·70	50	40	77	—
14	SW	29·83	29·60	29·88	29·57	50	39	95	24
15	W	29·80	29·56	29·85	29·56	53	45	70	—
16	W	29·76	29·46	29·85	29·38	50	35	58	16
17	W	29·88	29·85	29·94	29·83	40	32	60	
18	Var.	30·40	29·85	30·45	29·88	42	28	65	—
19	SW	30·43	30·30	30·50	30·35	38	27	70	
20	Var.	30·30	29·85	30·35	29·80	40	28	95	
21	Var.	30·12	29·92	30·20	29·80	45	26	89	
22	SW	29·65	29·40	29·80	29·40	45	31	90	12
23	Var.	29·60	29·42	29·65	29·40	41	28	72	18
24	NW	29·93	29·39	29·95	29·37	43	29	93	9
25	W	29·87	29·79	30·00	29·80	47	34	72	1
26	SW	29·88	29·60	29·92	29·59	52	32	76	1
27	SW	29·88	29·50	29·94	29·43	46	35	72	17
28	NW	29·65	29·50	29·65	29·50	43	28	85	—
L. Q. 29	SW	29·65	28·98	29·65	28·85	43	32	77	27
		30·43	28·98	30·50	28·85	53	21	78·5	2·32

NOTES.—First Mo. 1. Fine. 2. Much wind in the night: snow by morning. 3. After some snow, a thaw, p. m. 4. Small rain, a. m. fair p. m.: starlight. 5. Wet stormy day: clear night. 6. Hoar [illegible]: fair. 7. Fair, a. m.: cloudy, p. m.: a gale, with rain, during the night. 9. Wet mid-day: the *Cirrocumulus* has appeared two or [illegible] a week past. 10. *Cirrus* and *Cirrostratus* at sun-[illegible] followed by a gale with rain. 11. Gloomy, a. m. [illegible] and night as yesterday. 12. Fine day: a gale [illegible] 13. The gale continued, with cloudy weather:

e night, after a calm evening, was stormy. 14. Wet stormy day: in e evening, *Cumulus*, with *Cirrostratus* and *Cirrus:* the air clearing: uch wind in the night. 15. Much cloud and wind, a. m: small ain, p. m. night stormy. 16. Fair, with a gloomy sky, a. m.: some ain, p. m.: a heavy gale in the night. 17. The wind is now more oderate, with a tendency to NW: a very fine day and night. 8. Fair, with a breeze: a squall, with a little rain, p. m.: bright oonlight. 19. Fine. 20. Red *Cirrostrati* at sun-rise, with hoar rost: fine day, with *Cirrostratus* in flocks: *Cirrocumulus*, and *Cirrus*, ith a rainy aspect. 21. Gloomy overcast morning: some wind and ain by nine: afterwards fine with *Cumulus*, and a breeze from NW: unar halo. 22. Fine: windy, p. m.: in the fore part of the night, a eavy sourtherly gale, with showers. 23. Fine, windy: the barometer luctuating: lunar corona at night, the wind NW. 24. Rain very arly: wet forenoon: fair p. m. and night windy. 25. Fine, a. m. ith *Cirrus* and *Cirrostratus:* windy night. 27. Much wind in the ight, followed by rain. 28. Large *Cumuli*, with *Cirri* above, and he rapid developement of *Cumulostrati*, presented this afternoon a pring-like sky. 29. Hoar frost: fair day: a thickness to the S and W p. m. was followed by a nocturnal gale, with rain, as usual of late.

RESULTS.

Winds Westerly, introduced by the South East.

Barometer:	Greatest height .	30·43 in.	[By Clock 30·50 in.]
	Least . . .	28·98 in.	[. . 28·85 in.]
	Mean of the period	29·786 in.	[. . 29·790 in.]
Thermometer:	Greatest height .	53°	
	Least . . .	21°	
	Mean of the period	38·46°	[Lab$^{y.}$ 39·96°]
Mean of the hygrometer .		78·5°	
Rain.		2·32 in.	

Character of the period, stormy and changeable. Amidst a succession of gales of wind, there were many intervals of fine weather by day; and, as the thermometer shows, of frost by night.

Edinburgh, Jan. 3.—Notwithstanding the severe and continued frost, very little snow has hitherto fallen: excepting a little between Newcastle and Berwick, where it may be six inches deep in some places, there is none to be seen on the whole line of road from London.

STORMS OF WIND.

Edinburgh, Jan. 14.—On Monday night (12th) we were visited by one of the most severe gales we have experienced for a long time. It began to blow about ten o'clock from the south-west, accompanied with heavy rain, and continued to increase during the night until it became a perfect hurricane.

Edinburgh, Jan. 17.—Thursday morning (15th) the barometer had fallen eight-tenths of an inch; it then blew very hard, and during the whole course of the day slates and chimney-pots were flying about in all directions.—In the evening the gale increased, and about five o'clock it blew a perfect hurricane. In houses fronting the west a good deal of mischief was done in breaking the panes of glass, stripping the lead from the roof, dashing the cupola windows from their frames, and shivering them to atoms. In the course of the forenoon, two of the small minarets on the top of St. John's Chapel, at the west end of Prince's-street, gave way, and fell without doing any material damage to that beautiful building; not so, however, the effects of the evening—the violence of the wind carried off the whole of the minarets, large and small, leaving the summit of the tower a perfect ruin. Such was the force of the wind, that the masses of masonry were carried thirty feet beyond the base of the tower, penetrating not only the roof of the church, but also the floor, and breaking through the vaults to the foundation. One of the solid bars or bats of copper by which one of the pinnacles was bound to the top of the tower, was above an inch broad, and five-sixths of an inch thick; and though the pinnacle to which it belongs was only six feet high, with a medium breadth of about eight inches, so as to expose a surface of merely four square feet, yet such was the power of the wind, that it tore the copper bar from its place, and twisted one of its arms, which was eight inches long, through an arch of ninety degrees, as if it had been a slender piece of lead. This effect resembles more that which is sometimes produced by lightning than by any other agent.

LARGE METEOR

A beautiful meteor, with a long train, was observed at *Campbeltown*, near Fort St. George, (Highlands,) at six o'clock on Wednesday (Jan. 28?). To the naked eye, the diameter of the ball appeared to be about one foot, and the length of the train about six feet. Its course was from West to East —*Pub. Ledger.*

A violent storm was experienced at *Hamburgh* on the 15th Jan. accompanied by hail and rain. The Elbe rose so high, that all the lower part of the town was inundated, and the streets could only be passed in boats. Much damage was sustained, and melancholy accounts were expected from sea.

Feb. 5.—Two Hamburgh Mails arrived yesterday. From the Papers by them it appears that violent storms, accompanied with hail, thunder, and lightning, have been experienced in most of the northern parts of the Continent. At Stettin, Konigsberg, &c. much damage was sustained.

A letter from *Carlisle*, dated *January* 24, says:—During the week the weather has varied much; boisterous, rainy, and frosty in succession. The Eden, Petterill, and Caldew, were much swollen by the mountain torrents.—(PUB. LEDGER.)

THE SWALLOW.

The swallow has been found to return from its migrations, to the neighbourhood in which it was bred. While resident at Tottenham, I had occasion to observe, that these birds also remember *the occurrences of the former season.* A pair of *chimney swallows* had for several summers placed their nest in the inner angle of my porch, on the projection at the top of the column. The old birds used to take much pains with their young, to get them off the nest, when nearly able to fly; often approaching with a fluttering movement, as if to show them the way. One young bird remaining at last, afraid to venture, I placed a pair of steps, (a thing never before suffered,) and drove him off to the top of the neighbouring elms, where he was received by the flock with much sign of gratulation. But the bird, or his parents, remembered this intrusion the next season, and I had afterwards to undergo the same kind of buffetting in passing by, when there were young in the nest, as the cat had, whom they used to drive out of the front court, by coming down upon her, as if they would have flown in her face; a treatment which I never before experienced.

TABLE CXL.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
1st mo. Jan 30	W	29·23	28·85	29·75	29·26	44°	33°	70	7
31	SW	29·23	29·09	29·45	29·03	39	29	63	18
2d mo. Feb. 1	Var.	29·09	28·94	29·03	28·85	41	24	74	—
2	NE	29·10	28·94	29·08	28·80	32	20	90	—
3	NE	29·17	29·09	29·16	29·00	37	24	88	
4	N	29·50	29·09	29·50	29·00	32	26	82	
5	Var.	29·90	29·50	29·95	29·50	—	—	88	
6	Var.	30·02	29·90	30·05	29·91	41	24		
7	Var.	30·02	30·00	30·10	30·00	31	23	92	
8	NW	30·00	29·93	30·02	29·93	33	20	89	
9	Var.	29·99	29·93	30·02	29·97	33	23	90	
10	E	30·15	29·99	30·15	29·98	33	25		
11	SW	30·16	30·15	30·23	30·15	37	29	75	
12	SE	30·16	30·05	30·21	30·04	35	30	72	
13	NE	30·05	29·81	30·04	29·79	38	23	70	
14	SE	29·84	29·72	29·88	29·75	36	25	90	
15	E	29·88	29·80	29·92	29·81	40	27	93	
16	NE	29·93	29·88	29·96	29·89	47	34	97	
17	S	29·93	29·89	29·95	29·87	—	—	99	
18	SW	29·93	29·80	29·98	29·82	49	34		23
19	SE	29·99	29·75	30·06	29·75	51	28	95	19
20	S	29·96	29·65	30·04	29·65	46	29	95	6
21	SW	29·65	29·22	29·65	29·20	45	34	72	15
22	NE	29·73	28·94	29·70	29·38	38	28	67	—
23	NW	29·74	29·50	29·81	29·50	41	31	72	1·62
24	SW	29·80	29·51	29·85	29·47	49	36	61	—
25	SW	29·51	29·37	29·50	29·25	52	35	62	—
26	NW	29·72	29·42	29·76	29·35	42	29	72	—
L. Q. 27		29·60	29·27	29·60	29·20		34	82	57
28		29·53	29·29	29·63	29·38	47	35	62	3
		30·16	28·85	30·23	28·80	52	20	80	3·10

NOTES.—First Mo. 30. Squally: showers, a. m: wind and rain in the night.

Second Mo. 1. Hoar frost: rain, followed by snow in large flakes: *Cumulostratus*, and *Nimbus* 2. Hoar frost: fine *Cirri*, with *Cirrostratus*, a. m.: the lower modifications with some loose snow, p. m. 3. Fair, hoar frost. 4. Cloudy morning: snow on the waggons coming from the north, probably of last night: it seems to be the wind blowing over snow that keeps down our temperature to 32° 5. A few drops of rain about nine, a. m.: after which very fine, with *Cumulus*, &c. d inosculation. 6. Hoar frost: misty. 7 Hoar frost: the paths mist increases, with a calm air. 8. Misty: rime on the tops of ees. 9. Misty: the rime falls partially. 10. Misty till evening, when it cleared up, and the rime fell off. 11—15. Hoar frost with fine weather: *Cumuli*, &c: on the 15th a few drops of rain. 16. Very fine, with *Cumuli*, &c.: at seven, p. m. a large faint lunar halo. 17. Fine, with *Cirrocumulus*, &c. 18. Windy: wet, p. m. 19. A slight *Stratus*, a. m.; wet evening: windy night. 20. Hoar frost; somewhat misty; rain before noon: some hail in a shower at half-past one: after this *Cumulus*, with *Cirrus* and *Cirrostratus* above, the latter *imbricated*, or overlapping, like the branches of a pine-tree; then *Nimbi* amidst groups of other clouds, the lofty crowns of which were long coloured with a fine gradation of red tints about sun-set: the sky around the moon showed violet, while the disc was brassy. 21. Much wind, a. m. with clouds driving high and close; wet, p. m.: at evening a lighter sky, with *Cumulus* and *Cirrocumulus*, ending in *Cirrostratus*, with a lunar corona. 22. Morning cloudy and dark, by a large mass of smoke passing near us in the S: rain, sleet: snow to the depth of several inches, with a very gentle breeze: moonlight evening. 23. Fair, much snow on the trees and shrubs: a strong westerly breeze: the rise of the barometer, like the previous fall, very sudden: at night stormy, with hail and much rain. 24. The snow mostly gone: elevated *Cirri*, with *Cumuli* in a pale blue sky: after *Cirrostratus* and haze at evening, a gale through the night. 25. Much wind, with driving clouds: temperature 48° at nine, a. m. 26. a. m. Rain: snow in very large flakes: sleet: much water out since the late rains: rocky *Cumuli*, followed by *Nimbi* and gusts of wind, p. m.: clouds coloured at sun-set. 27. Wet, a. m.: fine evening after a rainbow. 28. Elevated *Cirri* and *Cirrocumuli* stretching NW and SE: general obscurity followed, with showers and wind.

RESULTS.

Winds variable: in the latter part stormy from the Westward.

Barometer:	Greatest height .	30·16 in.	[By Clock 30·23 in.]
	Least . . .	28·85 in.	[.. 28·80 in.]
	Mean of the period	29·663 in.	[.. 29·695 in.]
Thermometer:	Greatest height .	52°	
	Least . . .	20°	
	Mean of the period	34·20°	[Lab$^{y.}$ 35·80°]
Mean of the hygrometer .		80°	
Rain		3·10 in.	

The Evaporation for this and the preceding period taken together, is 1·38 inch.

METEOR.

A large and very luminous Meteor was observed *at two o'clock in the day*, the 6th of 2d Month, from Cambridge, and from Swaffham, Norfolk, descending from the zenith towards the northern horizon, within about twelve degrees of which it disappeared.—See a letter describing it, from Professor Clarke, in Thomson's Annals, &c. vol. ii. p. 273.

TABLE CXLI.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
3d mo. March 1	SW	29·64	29·62	29·67	29·55	47°	33°	59	18
2	SW	29·71	29·52	29·74	29·52	48	30	65	17
3	SW	29·75	29·25	29·65	29·03	50	32	82	14
4	SW	28·83	28·50	29·34	28·35	47	36	72	22
5	SW	29·20	28·83	29·20	28·55	44	34	60	—
6	S	29·39	29·09	29·38	28·90	46	30	64	26
7	S	28·88	28·70	28·97	28·63	49	37	75	37
8	W	29·33	28·88	29·38	28·86	47	31	58	3
9	W	29·36	29·26	29·38	29·25	43	28	55	—
10	W	29·42	29·24	29·45	29·20	42	29	60	—
11	NW	28·84	28·80	29·45	28·68	44	30	54	—
12	NW	29·26	28·84	29·25	28·73	45	32	62	36
13	N	29·80	29·26	29·85	29·25	43	28	69	—
14	SW	29·80	29·45	29·86	29·42	45	35	68	—
15	W	29·32	29·15	29·42	29·10	45	33	68	—
16	NW	29·68	29·32	29·70	29·30	48	34	67	12
17	W	29·98	29·68	30·07	29·70	52	37	58	
18	SW	29·95	29·93	30·07	29·95	52	43	56	
19	SW	29·95	29·58	29·98	29·58	52		59	—
20	NW	29·88	29·58	29·95	29·60	45	28		
21	SW	29·88	29·57	29·94	29·54	51	35	66	19
22	SW	29·57	29·22	29·62	29·10	50	42	80	68
23	SW	29·60	29·22	29·63	29·10	49	34	78	9
24	SW	29·70	29·49	29·77	29·47	50	31	65	38
25	NW	29·77	29·45	29·82	29·35	48	27	68	—
26	Var.	29·96	29·15	30·00	29·10	39	33	77	55
27	NE	30·26	29·96	30·33	30·00	45	27	64	1
28	SE	30·26	30·12	30·32	30·22	49	35	63	
L. Q. 29	S	30·13	30·05	30·22	30·10	49	27	53	
		30·26	28·50	30·33	28·35	52	27	65	3·75

NOTES. Third Mo. 1. *Cirrocumulus* followed by *Cumulus* and *Nimbus:* squalls with hail and rain: the bow at nine a. m. and again at three, p. m. 2. Fine, a. m. with clouds, as yesterday: wet, windy, p. m. 3. Hoar frost: fine, a. m.: clouds and wind, p. m.: rain with large hail in the night. 4. Fine morning: the barometer which had gone somewhat lower than here noted, rising abruptly: having risen about four tenths, it took to falling again rapidly: there was a com-
ercast sky (with haze in broad streaks, converging in the SW,
l moving swiftly under it) till dark; it now began to rain, and
rose to a greater degree of violence than for some years past,
ıs from SE and SW till past midnight; when it abated, the

barometer appears to have turned to rise more abruptly than before, having gone down an inch in fifteen hours (the actual lowest point 28·35 inches;) there is said to have been much thunder and lightning after midnight; the barometer fell, not uniformly, but by fits, at intervals of about a quarter of a minute, as the more violent gusts of wind came over. 5. Fine, a. m.: squally, with hail and rain, p. m. 6. The same. 7. Wet, stormy: much wind at night, with lightning far to the S and SE. 8. Fair, with *Cirrus* and *Cumulus:* the latter crossed with streaks of *Cirrostratus: Nimbi* succeeded with showers: windy night. 9. Fair, with wind and *Cumulus*: the clouds assume a more tranquil aspect: a little snow this evening. 10. Some fine specimens of *Nimbus* to-day, from which a very little snow fell: clear night. 11. *Cirrus:* windy: in the night some rain, followed by snow from the N. 12. The ground covered with snow: *Cirrus,* followed by *Cumulus* and *Nimbus:* showers. 13. Rain, snow, and sleet, early: various modifications of cloud to-day: at night, a few drops. 14. Hoar frost: some rain, p. m. and evening: lunar halo. 15. Windy: some showers. 16. Various modifications of cloud, a. m. ending in *Nimbus,* and a shower with hail, p.m.: at night, calmer than of late, with a lunar corona. 17. Fair, a. m.: turbid sky above, with *Cirrus, Cirrostratus,* &c.: windy. 18. Close *Cumulostratus* most of the day: windy at night. 19. *Cumulus,* with *Cirrus:* windy, p. m. tending to S: a little rain in the night. 20. The clouds gradually thickened, as for rain; but a brisk wind carried them off to the SE: hygrometer at five, p. m. 36°. 21. Hoar frost: the roads dusty: showers, p. m. 22. Some showers, with hail from NW: fine p. m.: all night a hard gale from about SW with rain. 23. Morning wet, and stormy: fine, with clouds, (among which was the *Cumulus* capped,) p. m.: night, pretty calm. 24. Fair, a. m.; then a hail shower: much wind, with rain in the night, 25. Some hail showers; large *Cumuli, Nimbi,* &c. 26. A steady rain from SE, with little wind, a. m.: the rain ceasing, p. m. the wind went by S to NW, and so probably by N to NE, where it was on the morning of the 27th, the barometer having risen rapidly with a uniform motion: a shower, p. m. 28. Fair, gloomy. 29. Fair, with *Cumulus* and *Cirrostratus.*

RESULTS.

Winds Westerly.

Barometer:	Greatest height .	30·26 in.	[By Clock 30·33 in.]
	Least (observed) .	28·50 in.	[.. 28·35 in.]
	Mean of the period	29·47 in.	[.. 29·525 in.]
Thermometer:	Greatest height .	52°	
	Least . . .	27°	
	Mean of the period . .	39·70°	[Lab^{y}· 41·45°]
	Mean of the hygrometer .	65°	
	Evaporation . . .	1·10 in.	
	Rain	3·75 in.	

Character of the period for the most part tempestuous, with frequent rains, the barometer running through a series of sharp depressions till near the close, when it suddenly assumed the elevation of fair weather. Almost all the showers, from the first, were more or less mingled with hail.

The storm of the 4th of Third Mo. appears to have been felt over the whole of South Britain, and to have been attended with much damage, and loss of lives, both by sea and land. I annex extracts from the papers, sufficient to show its prevalence on many distant points of our island at the same time. In a letter which I received soon afterwards from Dr. William Henry of Manchester, its effects are thus mentioned: "On the evening of that day (the 4th,) we had a violent storm of wind from the SW, which did considerable damage. It began about eight, p. m. and continued with increased violence till three or four in the morning of the 5th. Near Macclesfield it was so violent, that the London mail to this town was detained there from eight, p. m. till five a. m., and did not arrive here till ten hours after its usual time." The barometer, it appears, fell on this occasion, at Manchester, to 28·20 in.: the highest *temp.* of the day 44°. The lowest point it attained (28·35 in.) was ascertained by means of the registering clock, from which I was not at that time in the practice of taking off the results for publication.

On the subject of the barometer Dr. Henry adds, "My father once remarked it below twenty-eight inches, and was greatly surprised that no rain followed. Several weeks afterwards, he learned that a violent earthquake had been felt at that time, I think in Sicily." I introduce this remark, because it is probable most of my readers would be induced to attribute to a similar cause the phenomenon of a retrograde movement of the tide at *Hull,* which I annex, as I found it described in the public papers. It appears, that in the afternoon of the 4th of Third month, the tide on that coast having turned to ebb, suddenly flowed again for a short time, and to a greater height than before: in the early part of the morning of the 5th, on the contrary, the depth of high water in the dock fell short considerably. Now, if we suppose this gale of wind arriving suddenly from the *southward* (which by comparing the times of its beginning at Ryde, Isle of Wight, and at Manchester and Yarmouth, appears to be the fact,) a *swell,* produced by the compression of the water in the channel and straits of Dover, may have been propagated on the surface of the sea northward, with greater swiftness than the storm could make its way (as far as regards its action on the face of the earth) across the land to Hull. The arrival of this swell at the critical time of the tide's turning, accounts for the first fact. With regard to the second, it is matter of historical record, that an *off-shore* wind, (as this was at Hull,) if it blow long enough, and with sufficient force, may so remove the sea from the coast as to suspend a whole tide, and give opportunity to the estuary of a considerable river to run itself empty: as has happened, I think more than once, to the Thames. Portsmouth and Hull were therefore placed on this occasion, by the operation of the same cause, in opposite circumstances: the one had "the highest spring tide ever remembered," and the other, in a tide later, near five feet less water than was expected.

On Wednesday night (March 4th,) the Metropolis was visited by a storm more violent than any we remember for some years past. The wind began to blow m S to SW about eight o'clock, a perfect hurricane, accompanied with rain, at times with lightning: it raged with increasing fury until near one, when mporary abatement took place, which was followed by occasional squalls till een three and four o'clock. We regret to learn, that this tremendous storm has been productive of considerable damage in various parts of the town.—**Pub. Ledger.**

Yarmouth, March 5.—A most tremendous gale of wind from the S to the SE, with rain, came on about eight o'clock last evening, which continued with increasing violence all night, and has done considerable damage to the shipping on this part of our coast.

Deal, March 5.—Last night it came on to blow a most tremendous gale from the South, and continued nearly the whole of the night with unabated violence; at midnight it blew a complete hurricane, accompanied with thunder and lightning, during which, several vessels in the Downs suffered.

Portsmouth, March 5.—It blew a tremendous hurricane last night from S and SSE, accompanied with *the highest spring tide ever remembered.*

Ryde, March 5.—One of the severest gales of wind that has been felt here for the last thirty-seven years was experienced last night: it commenced about half past four p. m., and continued with increased violence until past eleven, during which time the greater part of the pier and several houses were demolished. The supposed damage is estimated at between four and five thousand pounds. No lives were lost, nor any damage done to the shipping.

Dartmouth March 5.—We experienced a perfect hurricane last night at SSE, from six to ten, p. m.

Exmouth, March 6.—On the 4th instant, between seven and eight o'clock in the evening, we had a most tremendous gale of wind about SSE, with dreadful rain, thunder and lightning.

Falmouth, March 4.—At day-light this morning the wind was from the WSW, moderate, about eleven a. m. it backened to the S, and from that to SSE, and since that time to the present moment (ten p. m.) it has blown a hurricane, with a heavy sea in from that quarter.

Penzance, March 6.—We had a very heavy gale here on Wednesday the 4th inst. from S to SSW.

Milford, March 6.—On the 4th inst. it blew a very heavy storm from SW to WNW.—*Shipping List.*

Leicester.—Wednesday night (Mar. 4) was one of the most boisterous recollected for years; much damage has been sustained in this town, and many parts of the county.

Hull.—The following phenomena were observed here on Wednesday the 4th March. At high water, about thirty minutes past four o'clock in the afternoon, the wind then blowing from the SW, with moderate weather, the tide flowed at the old dock gates eighteen feet six inches. After the tide had fallen from one to two inches, the dock gates closed as usual with the ebbing of the tide, which then began again to flow to the height, as near as can be calculated, of four or five inches, thereby opening the gates again; and continued flowing a sufficient time to allow one ship and several small vessels to pass into the dock, before it again began to fall. The *tempestuous night* of Wednesday ensued; the wind blew a heavy gale still from the SW, and at high water at five o'clock on Thursday morning the tide flowed fourteen feet one inch; being four feet five inches less than on the preceding evening; although from the spring tides having put in, the water ought, according to the usual state of things, to have flowed higher than on the Wednesday evening.

Plymouth, March 5.—At the commencement of the winter a few large stones were placed by themselves on the top or finished part of the Breakwater, to see if they could stand the winter gales: they stood all but this last, and this morning I found them washed from the top, and lying on the North Slope. There were three of them, one of *nine tons*, and the other two of five tons each: they will be replaced as soon as possible, for further trial.

Plymouth.—The effects of the late thunder storm of the 4th March, on a fir-tree belonging to W. Langmead, Esq. at Elfordleigh, in the neighbourhood of Plymouth, are too singular to be omitted, and perhaps the most extraordinary ones that ever occurred in this county on such occasion. The tree, in question, has been long admired for its size and noble proportions, being more than one hundred feet high and nearly fourteen feet in girth; but it exists no longer, having been literally shivered to pieces by the electric fluid. Some of the fragments lie two hundred and sixty feet from the spot, and others bestrew the ground in every direction, presenting altogether a scene of desolated vegetation, easier to be conceived than described.—**Papers.**

TABLE CXLII.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a.m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
3rd mo. March 30	SE	30·30	30·13	30·35	30·20	53°	35°	71	—
31	NE	30·25	30·20	30·35	30·25	44	35	64	—
4th mo. April 1	NE	30·25	30·13	30·30	30·19	47	35	55	
2	NE	30·32	30·23	30·37	30·28	47	38	64	
3	NE	30·37	30·32	30·40	30·36	45	32	52	
4	SE	30·32	30·02	30·38	30·04	49	22	50	
5	SW	30·02	29·22	30·04	29·18	54	40	63	4
6	SW	29·67	29·22	29·70	29·15	51	34	73	—
7	Var.	29·67	29·40	29·70	29·38	56	33	67	65
8	S	29·40	29·24	29·38	29·21	63	48	61	25
9	SW	29·50	29·24	29·55	29·21	56	40	61	6
10	S	29·50	29·16	29·52	29·10	55	42	70	17
11	NW	29·92	29·16	29·98	29·09	56	33	54	22
12	W	30·02	30·00	30·10	29·98	47	27	55	2
13	SE	30·00	29·65	30·00	29·62	53	33	55	
14	SE	29·69	29·63	29·71	29·62	59	28	53	
15	SE	29·63	29·34	29·68	29·32	60	28	69	
16	SE	29·34	29·20	29·32	29·18	57	47	52	16
17	E	29·30	29·20	29·27	29·19	54	42	77	—
18	NE	29·66	29·30	29·67	29·27	50	32	50	
19	E	29·72	29·66	29·80	29·67	53	26		
20	Var.	29·72	29·63	29·79	29·63	54	28	55	
21	E	29·66	29·62	29·71	29·63	57	40	48	
22	SE	29·62	29·45	29·66	29·40	58	43	53	—
23	E	29·45	29·24	29·45	29·19	46	42	80	81
24	NE	29·24	29·08	29·26	29·02	53	42	75	52
25	SW	29·35	29·08	29·37	29·03	58	42	65	5
26	Var.	29·35	29·25	29·41	29·30	68	52	60	14
L. Q. 27	SW	29·75	29·25	29·80	29·35	65	44	60	—
		30·37	29·08	30·40	29·02	68	22	61	3·09

Notes.—Third Mo. 30. Hoar frost: a breeze, variable, succeeded by *Cirrus* mingled with *Cumulus:* a few drops, p. m. 31. Fine breeze: large *Cumulostrati,* with a few drops of rain: clear twilight.

Fourth Mo. 1. Fine: *Cumulus* passing to *Cumulostratus* in a brisk wind: at sunset an evaporation of the clouds, followed by dew and
an twilight. 2. Cloudy morning: *Cumulostratus* carried in a
through the day. 3. As yesterday, with the addition of
; sun-set. 4. Much sun, with long, faint linear *Cirri.*
; calm: a warm sun, with much dust: *Cirrus* increased

to obscurity in the evening, and it rained by night. 6. A gale through the day: calm night. 7. Wet, a. m. from the eastward: p. m. rain from the SW: a gale in the night. 8. Turbid sky: *Cirrocumulus* at nine, a. m. with the temp. 56°: afterwards, the wind southing, we had showers at intervals, and a gale by night. 9, 10, 11. Windy, with showers. 12. *Cumulostratus* chiefly, but with rain at intervals: in the evening the wind went to NW, with large *Nimbi.* 13. Fair, with *Cumulostratus.* 14. In the evening a large, faint, lunar halo, on a kind of *Cirrose* obscurity, spread from NW towards the zenith. 15. Hoar frost: fine sky, with tendency to *Cirrocumulus.* 16. Hoar frost: *Cirrocumulus* by nine, a. m. in extensive beds: a smart breeze came on, with *Cirrostratus* and fleecy *Cumulus,* and *the first swallow* made its appearance about five, p. m.: rain ensued after dark, with a fragrant smell from the turf. 17. Drizzling morn: fine day. 18. Windy, overcast, bleak morning: fine day. 19. *Cumulostratus,* windy. 20. Hoar frost: fair with clouds: in the evening a westerly current was evident above, by the motion of elevated *Cirrostrati:* two different beds of this cloud had appeared at sun-set, crossing at an oblique angle in the S: the eclipse of the moon was well seen at intervals through these. 21. Little wind: fair. 22. Wet, p. m. 23. Very wet, a. m. and again, with wind, at night. 24. Overcast day: wet evening and night. 25. Some drizzling rain, after inosculation of heavy *Cumuli* with a stratum of clouds above. 26. Fleecy *Cumuli,* with *Cirri,* and tendency to *Nimbus* in the S: at nine, a. m. an unusual agitation, evidently electrical, was produced in a *Cirrus,* by the passage beneath it of fleecy *Cumuli,* which came from S, with the vane at E: thunder-clouds soon after formed, and before one p. m. we heard three distinct explosions; two successive showers of rain mixed with hail followed, but without wind: in the evening, large thunder-clouds continuing about, it lightened for some hours in the distance, nearly all the horizon round, the W only being free from it: the wind SE. 27. Cloudy, wet morning: windy at SW: fine afterwards, with large *Cirrus* above *Cumulus:* some lightning at night in the NE.

A *Tornado* occurred in the county of Middlesex at the time of the thunder-storm, which I have noticed (Fourth Mo. 26) as preceded by an unusual demonstration of electricity in the clouds. It was observed by Col. Beaufoy from Bushy Heath, near which its course terminated, after proceeding in a direct line about five miles in twenty minutes, but probably moving in its circular whirl with more than five times that velocity. In its course it uprooted trees, unroofed houses, threw down walls, and in short removed every thing that impeded its progress; being visible by means of the inverted cone of cloud occupying its interior.—See Thomson's Annals of Philosophy, vol. xi. p. 442, &c.

RESULTS.

Winds Variable, with much South East.

Barometer:	Greatest height .	30·37 in.	[By Clock 30·40 in.]
	Least . . .	29·08 in.	[.. 29·02 in.]
	Mean of the period	29·642 in.	[.. 29·656 in.]
Thermometer:	Greatest height .	68°	
	Least . . .	22°	
	Mean of the period	45·36°	[Lab$^{y.}$ 46·09°]
Mean of the	hygrometer . .	61°	
	Evaporation . .	1·40 in.	
	Rain . . .	3·09 in.	

The excessive rains continuing, have occasioned repeated overflowings of the river Lea into the marshes. Vegetation, which continued nearly dormant at the commencement of this period, was making considerable progress towards the close of it.

A tremendous storm of hail and rain, accompanied by thunder and lightning, fell at Hampstead on Sunday, April 26, at half-past eleven, and the effects were severely felt at Hendon and the adjacent villages. Upwards of twelve large trees were blown down at Hendon. At one o'clock its effects were felt at Dunstable, Redburn, and Market-street, where the hailstones were so large as to break the church windows, &c. The accounts from various parts mention the dreadful effects of this storm.—PUB. LEDGER.

A Letter from *Boston*, dated April 28, says,—From eight until eleven o'clock on Sunday night, this town and the neighbourhood were visited by a most dreadful storm of thunder and lightning; when the latter was more extensively diffused than any that has been witnessed in this part of the kingdom since the month of July, 1809. An old man, who has travelled in the East, says, 'He has seen such lightning before in India frequently—in England never.'—PUB. LEDGER.

HAIL STORMS IN FRANCE.

The French Journals continue to give deplorable accounts of the ravages in the departments of the Saone and Loire, occasioned by dreadful hail storms. The hail-stones are described as being as large as pullet's eggs. The game was every where found dead in the fields; and several persons were severely wounded by the hail. In one vineyard alone, between Orleans and Beaugency, the damage done by the storms is estimated at four thousand pipes of wine.—PUB. LEDGER, *May* 16.

ICE IN THE ATLANTIC.

Capt. Quereau, of the Grand Turk, which has arrived at Derry from New York, states, that on the 15th of February, in latitude 43, he passed through several islands of ice, some miles in extent, from three to four hundred feet high. The ship, with strong westerly gales, was two days in getting clear of them.—PUB. LEDGER.

The Speedy Packet, arrived from New York, saw, on 28th March, in lat. 45. 32. long. 46. 20. an island of ice, the summit of the peak of which was, on a moderate calculation, four hundred feet above the surface of the water; and in lat. 45. 36. long. 48. 00. W. passed two more, the largest of which was two hundred and fifty feet above the sea, and three quarters of a mile in length.—SHIPPING LIST.

The ships arriving from the westward continued to report having seen immense masses of ice. The Minerva, from New York, in lat. 41. 50. N. lon. 50. W. passed a number of islands of a height of from a hundred and fifty to two hundred feet. The Washington too saw several fields of ice, in lat. 42. W. long. 48. 20.—PUB. LEDGER, *May* 25.

The Albion, Davis, arrived at Amboy in forty-five days from North Wales, [Labrador] saw, June 11th to 18th, from lat. 46. to lat. 43. lon. 52. upwards of forty islands of ice, many of them very large.—PUB. LEDGER.

ICE ISLANDS.

It appears that there are immense bodies of ice now floating in the Atlantic, as there were during the last spring and summer, [when a very extensive one is said to have been observed in the neighbourhood of the Bahamas.] The packet which has arrived from Halifax saw one two hundred yards in height, and apparently seven leagues in circumference, standing southward with the current. On account of the connexion of every circumstance of this sort with our Arctic Expedition, the captain's log, with the latitude, bearings, &c. have been sent by the Post-office to the Admiralty.

TABLE CXLIII.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
4 mo April 28	SW	29·98	29·80	29·98	29·80	53°	30°	53	
29	NE	29·98	29·75	29·98	29·71	65	41	50	
30	Var.	29·88	29·75	29·71	29·47	53	48	70	51
5th mo. May 1	SW	29·88	29·70	29·89	29·67	60	35	56	5
2	Var.	29·85	29·45	29·85	29·45	69	47	52	39
3	SW	29·48	29·36	29·45	29·35	66	43	75	3
4	NW	29·48	29·40	29·48	29·40	67	42	58	
5	NE	29·40	29·26	29·46	29·27	65	48	62	18
6	NE	29·26	29·22	29·27	29·22	65	45	72	31
7	SW	29·51	29·26	29·50	29·25	62	43	63	—
8	S	29·51	29·40	29·52	29·39	65	44		1·46
9	SW	29·84	29·51	29·84	29·51	60	45		2
10	SW	29·84	29·67	29·84	29·67	64	37	50	—
11	S	29·67	29·57	29·67	29·57	67	49	43	2
12	NW	29·63	29·45	29·64	29·40	66	40	44	15
13	SE	9·45	29·30	29·40	29·30	61	41	59	10
14	S	29·47	29·30	29·47	29·30	58	39	57	1
15	NW	29·52	29·47	29·50	29·45	63	41	46	—
16	N	29·65	29·52	29·65	29·50	63	50	45	5
17	NW	29·87	29·65	29·87	29·65	61	44	75	
18	N	30·00	29·87	30·00	29·87	69	47		
19	NE	30·05	30·00	30·05	30·00	57	38		
20	E	30·20	30·05	30·20	30·05	65	45		
21	E	30·23	30·20	30·23	30·18	59	36		
22	E	30·32	30·23	30·31	30·22	61	42		
23	NE	30·35	30·32	30·34	30·30	61	37		
24	SE	30·35	30·25	30·36	30·25	63	44		
25	NE	30·26	30·25	30·27	30·23	65	40		
L. Q. 26	NE	30·33	30·23	30·34	30·23	69	42		
		30·35	29·22	30·36	29·22	69	30	57	3.28

Notes.—Fourth Mo. 28. Much dew: at nine a. m. a brisk wind carrying *Cumuli,* above which appeared beds of *Cirrus* and *Cirrocumulus,* moving from SE: a fine day ensued, with *Cumulostratus.* 29. Fine. 30. Overcast early, with the wind NE; after which wet till evening.

Fifth Mo. 1. A fine day, save a shower or two. 2. Large *Cumuli* rose, which, in the E especially, mingled and inosculated with *Cirrostratus* above; I suspected thunder in that direction: at sun-set, *Cirri* from N to S, above *Cirrostrati,* ranging E and W: rain by night. 3. Drizzling, a. m.: fine, with *Cumulus,* and *Cirrus* at mid-day: in the evening, heavy showers appeared to the N and NE, with much

Cirrostratus overhead. 4. Very fine, with *Cumuli,* and large, plumose *Cirri* stretching E and W; the clouds, though heavy, dispersed at sun-set. 5. Sunshine at six a. m., with a few *Cirri,* &c.: before seven, a sudden mist came on from the E and NE, which obscured the view of the *Solar Eclipse* during the middle half hour of the time; the dew lay on the grass till noon, in the sunshine, and large *Cumuli* formed inosculating with the clouds above: at two p. m. some heavy showers fell, but so local, that the road, half a mile off to the S, remained dusty: in the evening, *Nimbi* appeared in thunder-groups to the SE and S, and, finally, more extensive rain came on, with the wind SE. 6. Rain, a. m., and at night.

RESULTS.

Winds variable.

Barometer:	Greatest height .	30·35 in.	[By Clock 30·36 in.]
	Least . . .	29·22 in.	[.. 29·22 in.]
	Mean of the period	29·766 in.	[.. 29·754 in.
Thermometer:	Greatest height .	69°	
	Least . . .	30°	
	Mean of the period	52·84°	[Laby. 53·207°]
Hygrometer (mean of 18 days)		57°	
	Evaporation . .	1·70 in.	
	Rain . . .	3·28 in.	

Having left home on a journey on the morning of the 8th of Fifth mo. I did not witness a very uncommon fall of rain which took place in this neighbourhood. It commenced early in the evening of that day, and lasted about twelve hours. Near an inch and a half of water descended in the above space of time, which, taking the shortest course from the higher ground to the hollows, filled the latter several feet deep, and overflowed the roads, in several places not usually subject to this accident. Much inconvenience, and some loss of property ensued, the particulars of which were detailed in the newspapers of the subsequent days. This heavy rain seems to have been connected with a change in the general current, which after a few days' further continuance of unsettled weather, became established from the northward, the barometer assuming a high level, and the earth drying rapidly. It was, indeed, a singular spectacle to behold the ground saturated with water, and every spring running, up to so late a period in the season as the middle of the Fifth month, when our fields are commonly dry enough, in every situation, to admit of the soil being pulverised by the harrows.

WEATHER ABROAD.

About the end of April parties in sledges were still making at *Stockholm;* at *Petersburgh* the people were walking and driving carriages on the ice of the Neva; while but a few days later at *Vienna* they were complaining of the heat.

According to a letter of the 10th ult. from *Lisbon,* the weather there had been for some weeks excessively cold and rainy.—PUB. LEDGER, *June* 1.

TABLE CXLIV.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
5 mo. May 27	NE	30·23	30·13	30·24	30·13	67°	39°		
28	NE	30·13	30·09	30·13	30·09	69	44		
29	NE	30·13	30·01	30·13	30·00	63	41		
30	NE	30·02	29·90	30·03	29·90	65	33		
31	NW	29·97	29·90	29·96	29·90	74	51		
6 mo. June 1	NW	30·00	29·97	30·00	29·95	77	57		
2	W	30·05	30·00	30·05	29·97	80	43		
3	W	30·14	30·05	30·14	30·03	80	45		
4	SE	30·30	30·14	30·30	30·14	82	45		
5	E	30·33	30·30	30·33	30·29	79	43		
6	NE	30·33	30·25	30·32	30·24	78	45		
7	SE	30·27	30·18	30·27	30·19	77	52		
8	SE	30·27	30·23	30·28	30·23	75	49		
9	SE	30·23	30·20	30·22	30·20	75	46		
10	SE	30·21	30·10	30·20	30·10	80	50		
11	SE	30·10	29·98	30·10	29·99	84	47		
12	E	29·98	29·85	29·98	29·85	88	51		
13	NW	29·93	29·82	29·90	29·82	89	58		3
14	NW	30·07	29·93	30·05	29·90	75	49		—
15	SW	30·05	29·92	30·02	29·92	78	55		—
16	SW	29·92	29·75	29·92	29·75	78	59		
17	SW	29·70	29·67	29·75	29·67	74	54		6
18	NW	29·79	29·69	29·78	29·69	75	49	50	—
19	SW	29·79	29·53	29·80	29·53	72	52	45	2
20	SW	30·00	29·60	29·99	29·66	72	46	47	1
21	SW	30·00	29·75	30·00	29·77	71	56	43	6
22	SW	29·76	29·64	29·77	29·64	71	50	62	25
23	NW	29·87	29·76	29·90	29·77	71	53	44	
24	NW	30·09	29·77	30·10	29·90	74	52	47	—
L. Q. 25	SW	30·09	30·02	30·10	29·98	79	56	52	
		30·33	29·53	30·33	29·53	89	33	48	0·43

Notes.—Sixth Mo. 6. Since this period came in, the weather has afforded little variety. The days have been serene, with breezes, which commonly increased with the temperature, and died away at sun-set: the nights nearly calm, with dew, and a peculiarly clear, but not high-coloured twilight. Thunder-clouds have shown themselves at intervals in the horizon; and to-day there are large plumose *Cirri.* 8. My brother observed, about nine, p. m. a bright, blue meteor descending from the zenith to the NW. 10. After sun-set, some beautiful diverging shadows on a pure, dilute, carmine tint in the NW. 11. Thunder-clouds about. 12. A thunder-group in the N and NW: the *Cirrostratus* for a short time assumed the form of the *Cyma,* and several discharges were heard while the *Nimbi* expanded their crowns within view: after this, it lightened in some clouds to the SE. 13. *Cumuli*, mingled with haze and *Cirri*, were followed in London by a smart thunder-shower; while at Tottenham there fell but little rain: a lunar corona ensued. 14. A little rain, a. m.: a large, faint lunar halo. 15. A few drops at evening. 16. Cloudy: a strong breeze. 17. A light gale, with a rainy sound, and much cloud; but the showers proved scanty. 18. Much cloud, chiefly *Cumulostratus:* after some light showers, and appearances of rain and thunder to the southward, the twilight cleared up orange. 19, 20. Windy, cloudy: light showers; *Cumulus, Cirrocumulus*. 21. *Cumulus*, with the lighter modifications above, increased to obscurity: wind through the day, and small rain, evening. 22. Windy, cloudy morning: this day more decidedly showery. At eleven p. m. a shooting star descended to the SE. 23, 24. More calm, with summer clouds in various modifications. 25. A very slight rain, a. m. followed by fine blue sky, and various clouds carried by a strong breeze.

RESULTS.

Winds in the fore part light and Easterly, in the latter part Westerly and stronger.

Barometer:	Greatest height .	30·33 in.	[By Clock 30·33 in.]
	Least . . .	29·53 in.	[.. 29·53 in.]
	Mean of the period	29·998 in.	[.. 29·999 in.]
Thermometer:	Greatest height .	89°	
	Least . . .	33°	
Mean of the period at the Lab$^{y.}$		62·36°	
Mean of the Hygrometer (the latter week) . . .		48°	
Evaporation (a few days estimated)		4·50 in.	
Rain		0·43 in.	

The clear hot sunshine of the greatest part of this period had the effect of establishing the summer in our climate in a manner to which we have long been unaccustomed. The deeper green of the foliage and the richer colour of many flowers in particular, presented a striking contrast to their appearance during the last two seasons; while the soil, parched and cracked over the whole surface of our loamy meadows, bore ample testimony to the continued receptive power of the atmosphere. Yet (to use a familiar phrase) *the turf did not burn*, probably in consequence of the supply of moisture still left at a certain depth in the soil.

TABLE CXLV.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
6 mo. June 26	SW	30·05	29·95	30·07	29·95	79°	49°	47	
27	SE	29·95	29·67	29·95	29·67	84	55	43	—
28	SW	30·17	29·75	30·13	29·75	72	52	44	20
29	Var.	30·26	30·17	30·27	30·13	81	51	43	—
30	NW	30·26	30·15	30·26	30·12	84	52	43	—
7 mo. July 1	NE	30·15	30·02	30·13	30·02	81	52	42	—
2	Var.	30·22	30·10	30·20	30·09	73	44		
3	NW	30·22	30·06	30·20	30·04	79	57	45	
4	N	30·06	30·04	30·07	30·03	77	52		
5	NE	30·10	30·04	30·10	30·00	79	51	46	
6	SE	30·10	30·00	30·10	30·00	84	52	45	
7	SE	30·00	29·80	30·00	29·80	81	56		
8	NW	30·11	29·80	30·10	29·82	74	50	46	
9	NW	30·11	30·10	30·11	30·10	78	53	45	
10	Var.	30·10	29·95	30·10	29·93	76	55	42	
11	SW	29·95	29·76	29·93	29·74	79	50	42	33
12	NW	29·85	29·76	29·87	29·75	74	57	70	1
13	N	30·20	29·85	30·20	29·87	77	52	52	
14	NW	30·32	30·20	30·31	30·20	83	57	52	
15	Var.	30·32	30·28	30·30	30·25	86	53	47	
16	NE	30·28	30·18	30·25	30·18	88	62	45	
17	E	30·20	30·09	30·19	30·09	82	52	53	—
18	SE	30·09	29·91	30·09	29·90	84	57	50	
19	NW	29·95	29·88	29·95	29·90	85	59	50	
20	Var.	29·95	29·92	29·97	29·93	76	52	55	
21	NW	30·05	29·95	30·05	29·92	80	56	45	
22	SW	30·13	30·05	30·13	30·05	84	55	45	
23	SE	30·13	29·83	30·13	29·80	83	60	47	
24	SE	29·83	29·80	29·85	29·80	93	61	40	9
		30·32	29·67	30·31	29·67	93	44	48	0·63

NOTES.—Sixth Mo. 27. It is said to have been misty early. Some remarkable, rapid changes in the electrical state of the clouds took place, the wind being brisk, veering from SE to SW. *Cirri,* passing to *Cirrocumulus* and *Cirrostratus,* grouped like the ribs of a vessel, on a kind of keel presenting downwards; very dense and magnificent. With these were mingled the rudiments of *Nimbi,* one or two of which formed in sight, and probably discharged to the NE of us: a few drops fell, and there were distant thunder-storms in different directions at night. 28. Some fine rain, a. m.: several short, heavy showers about noon: inosculation, and gray sky, evening. 29, 30. Fine, with large *Cirri* above *Cumuli:* some drops of rain.

Seventh Mo. 1. A fine display of *Cirrocumulus,* with a specimen of *Cirrostratus* resembling the grain of wood: also large plumose *Cirri,* p.m.: *Cumulostratus,* and a few drops, evening. 2, 3. Exhibitions of the lighter modifications variously interchanging and mingling, succeeded by *Cumulostratus.* 4. Windy morning, overcast with *Cumulostratus:* a fine day: twilight coloured, with diverging shadows. 5. Very fine day: *Cirrocumulus* above *Cumulus,* producing beautiful clouds by inosculation. 6. At *three* this morning, in the NE, a most extensive orange twilight, in the form of a pyramid, resting on a base of low purple haze, occasioned by dew in that quarter. A fine day ensued, with a breeze, and *Cumuli* casting shadows in a somewhat hazy air. 7. The shadows radiating downward from clouds continue, perhaps occasioned by fine dust floating. I observed, in passing Hounslow Heath, two whirlwinds, carrying the dust in a narrow perpendicular vortex to a great height in the air, from whence it perceptibly showered down again. 8. *Cumulostratus,* after a clear morning: strong breeze and much cloud, with a few drops. 9. Clear morning, with *Cumulus, Cirrus,* and a breeze. About seven, p.m., setting out to return from London, I saw, in the NW, a remarkably large *Cirrus,* composed mostly of straight, diverging fibres, extended towards the SW; and which, when I got home, had passed to *Cirrostratus.* In this cloud, (as it appears,) my family at the same time observed a coloured *solar halo* with two rather indistinct *parhelia,* the whole of which had escaped my notice in coming out of town. 10. A few large drops between six and seven, a.m.: close *Cumulostratus* prevailed afterwards. 11. Large *Cirri,* passing to the form of the *Nimbus,* mingled with *Cirrocumulus* and *Cirrostratus.* In the evening an extensive obscurity in the W and SW, fronted by dense *Cirrostrati:* a fresh, turfy smell came with the wind, and at length, at half-past ten, it began to rain steadily with us. 12. Wet morning: fine day afterwards. 13, 14. Fine, with *Cumuli,* &c. dew, and orange twilight. 15. A *Stratus* last night: thunder-clouds about: the moon bright gold colour, crossed by fine streaks of *Cirrostratus.* 16. The moon paler, amidst hazy *Cirrus* and *Cirrostratus,* &c. in SE. 17. Cloudy morning: light shower, then fine with *Cirrus* and *Cirrocumulus.* 18. Thunder-clouds, p. m.: *Nimbi,* &c. grouped in the N. 19. Wind SE: thunder came within hearing to the NW, p.m.: temp. 85°: hygrometer 30°: not a drop of rain here, and wind NW after it. 20. Thunder-groups, and rain visible to the northward: fair with us: clouds red at sun-set. 21. Wind W, a. m. *Cirrocumulus,* chiefly in strips from N to S; then *Cumulostratus,* &c. A very variously compounded and coloured sky during twilight. 22. Fleecy *Cumuli,* &c.

a. m. 23. Serene, with *Cirrus*, and fine breeze. 24. *Cirrus* and *Cirrocumulus*, proceeding to electrical formations: strong breeze and slight solar halo: p. m. after the maximum of temp. was over, *Nimbi*, with thunder and lightning, approached from the south. The clouds at sun-set showed very rich crimson, lake, and orange tints; and we had showers, with a hollow wind, and lightning, till past midnight.

RESULTS.

Winds light and Variable.

Barometer:	Greatest height .	30·32 in.	[By Clock 30·31 in.]
	Least . . .	29·67 in.	[.. 29·67 in.]
	Mean of the period	30·037 in.	[.. 30·031 in.]
Thermometer:	Greatest height .	93°	
	Least . . .	44°	
Mean of the period (at Lab^{y}· chiefly)		67·24°	
Mean of the hygrometer	.	47°	
Evaporation		4·60 in.	
Rain		0·63 in.	

A period unequalled in warmth since the year 1808, when the Seventh month averaged 67·19°, and the thermometer at Plaistow rose to 96°. The Eighth month, 1802, (averaging 67·56°), is the only one that has *exceeded* the present in heat for twenty years past.

THUNDER STORMS.

Devonshire, July 19.—The villages of Lympstone, Exmouth Woodbury, Otterton, Budleigh, and other places in that neighbourhood, were visited with a sudden and most tremendous storm of rain, accompanied with thunder and lightning.

July 19, a dreadful thunder-storm burst over *Stafford*. The lightning set fire to a barn at the farm of Mr. Lathbury adjoining that town. The barn was burnt to the ground, before the progress of the flames could be arrested; and it was with difficulty that the rick-yard and house were preserved. The lightning struck the premises of Mr. Nixon, hatter, one of the Society of Friends, at the same time. The same evening a tremendous storm of rain burst over the village of *Brereton*, and the roads were momentarily impassable from the sudden accumulations of water.

The same day there was a heavy tempest at *Downham Market*, Norfolk, and in the neighbourhood; and, while the rain poured down in torrents, a ball of electric fire fell and exploded upon a new barn at Magdalen, belonging to Mr. E. Butrick, which consumed the same, together with upwards of twenty sacks of rye grass-seed, in the sacks. We have not heard of any other damage.

A most beautiful water-spout was seen at *Gainsborough*, in Lincolnshire, on Monday last, so awfully grand, as to astonish every beholder of its majestic movements and colours.—PUB. LEDGER.

For three days lately *Gloucester* has been visited by very heavy storms of rain, accompanied by thunder and lightning; on Saturday evening, particularly, the lightning was exceedingly vivid, and the crashes of thunder awfully loud and sublime. The mast of a barge lying in the basin of the canal, was struck by the electric fluid, and splintered from the top to the bottom, a solid piece being carried away from the lower part. There were seven persons on board at the time; but though most of them felt the shock, and a handkerchief round one of their hands was burnt through by the lightning, yet none of them suffered injury.—PUB. LEDGER, *July* 22.

HEAT ABROAD.

Haarlem, July 31.—A great deal of damage has been done within the last week by terrible storms of thunder and lightning. Five or six farm-houses in different parts of the country were struck by the lightning and totally consumed.

Accounts from *Arnheim* say—that on the 24th and 25th the heat was there from 92 to 94 of Fahrenheit. An equal degree of heat prevailed in those days in many parts both of Holland and Brabant.—PUB. LEDGER.

TABLE CXLVI.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 7 mo. July 25	SW	29·85	29·80	29·86	29·80	77°	54°		
26	S	29·85	29·80	29 83	29·80	84	62	45	2
27	N	30·22	29·80	30·20	29·80	79	51	52	
28	SW	30·27	30·22	30·27	30·20	72	47	37	
29	SW	30·27	30·16	30·25	30·16	81	56	40	
30	SW	30·16	30·10	30·17	30·10	82	59	40	
31	W	30·10	29·97	30·10	29·97	80	58	46	12
8 mo. Aug. 1		30·18	30·03	30·17	30·01	70	50	52	
2	S	30·18	30·10	30·17	30·10	70	43	50	
3	S	30·10	30·07	30·11	30·07	79	47	48	
4	SE	30·10	30·05	30·11	30·05	87	50		
5	E	30·03	30·00	30·05	30·01	93	57		
6	N	30·09	30·03	30.10	30·02	88	59	40	—
7	NW	30·10	30·07	30·10	30·05	76	52		
8	NW	30·10	29·95	30·10	29·95	78	53		
9		29·95	29·87	29·95	29·88	82	56	52	
10	NE	30·20	29·95	30·19	29·95	72	43		
11	NE	30·20	30·10	30·18	30·07	70	50	47	
12	NE	30·13	30·07	30·14	30·06	72	46	50	
13	NE	30·13	30·10	30·15	30·09	76	45	47	
14	NE	30·10	30·08	30·10	30·06	71	53		
15	NE	30·11	30·08	30·10	30·07	68	53		
16	N	30·08	30·00	30·07	30·02	76	46		
17	N	30·00	29·90	30·02	29·90	76	45		—
18	NW	29·94	29·88	29·93	29·89	77	50		
19	N	30·04	29·94	30·05	29·93	66	46		—
20	N	30·04	30·03	30·05	30·01	66	50		
21	NW	30·06	30·00	30·06	30·00	71	44		
22	NW	30·20	30·06	30·20	30·05	66	43	39	
		30·27	29·80	30·27	29·80	93	43	45	0·14

NOTES.—Eighth Mo. 4. With the exception of a gentle rain in the evening of Seventh month 31, steady fine weather has continued Much *Cirrocumulus* has appeared of late This day, in travelling, I observed the clouds, both at sun-rise and sun-set, beautifully coloured with a double gradation of tints, in which the successive effects of the direct and refracted rays were very distinctly marked. 6. Wind in the morning, SE, brisk, with *Cirrostratus* and *Cirrocumulus;* the latter formed in one instance out of *Cirrus* with unusual rapidity; the wind veered gradually from SE by SW to NE: at nine, p. m. a strong breeze blowing, with an appearance of rain to NW, it began to lighten: at first, a very faint blue flash: then others, gradually increasing in intensity at intervals of about a minute, filling the air, without being referrible to any point of the compass, followed generally by a sudden puff of wind, and without thunder. In twenty minutes, however, thunder began to be heard in the W and NW, and a storm passed in view to the NE, the flashes broad and vivid on the whole North horizon, and crossed by delicate striæ of a different colour. We had only a few drops of rain, and it was over in two hours. 7. The sun-set was more richly coloured with yellow (passing at length through orange to lake and purple) than I remember ever to have seen it in this tint before. It literally glowed like a bright flame on the lower surface of some dense *Cirri*, passing to *Cirrocumulus;* which modification was well marked afterwards. 9. A fine coloured sun-set again, but in deep orange passing to red, and succeeded by *Cirrostratus.* 10. Cloudy, with a brisk wind most of the day: *Cirrostratus* and dew. 11—13. Fine breeze, varying to N and E: much dew; twilight orange; and the moon pale. 14—22. Pretty strong breezes prevailed during this interval: the sky presented usually the *Cumulus* passing to *Cumulostratus;* but at intervals this modification took its character from *Cirrocumulus,* which entered into its composition from above. There was scarcely any *Cirrus,* or obscurity above the clouds, but rather a cold, transparent blue: two or three times the density of the clouds promised showers, but it always ended in a very light sprinkling. Coloured skies at sun-set were frequent; as also the appearance of diverging bars of light and shade, which I ascertained in several instances to be due to the immense quantity of *dust* constantly floating in the air. 22. This morning, being gray with *Cirrocumulus* and very cool, seemed like the commencement of autumn; and the warmth of a fire was acceptable in a north room in the evening.

RESULTS.

Winds Southerly in the fore part: Northerly, with depression of temperature, in the latter part of the period.

Barometer:	Greatest height .	30·27 in.	[By Clock 30·27 in.]
	Least . . .	29·80 in.	[. . 29·80 in.]
	Mean of the period	30·051 in.	[. . 30·101 in.]
Thermometer:	Greatest height .	93°	
	Least . . .	43°	
	Mean of the period	63·32°	[Lab^{y}· 63·74°]
Mean of the hygrometer .		45°	
Evaporation, nearly . .		4 in.	
Rain		0·14 in.	

A period unequalled in *dryness* since the beginning of 1810; when with a *frosty* air, under a similar course of winds, and the barometer averaging 30·07 in. there fell in thirty days only 0·12 in. of rain.

WHIRLWINDS, &c.

(Copy of a Letter to the Author.)

SIR,

By your request I once had the pleasure of sending you an account of a luminous meteor seen by me at Peckham. Founded on this, and your curiosity in all the phenomena of our atmosphere, I presume the following may be acceptable. While sitting at a window facing the south, I observed a column of dust rising from a field that had been roughly ploughed the day before. I was surprised at the size of the column, as also at the figure that was preserved—that of a truncated cone, the base upwards, its diameter about thirteen feet, its height perhaps thirty or forty feet, and the diameter of the part next the ground rather less than a yard. At first only dust rose within it, but after about half a minute large pieces of earth were lifted, I suppose about ten or twelve inches from the ground, one of these could not be less than the size of a man's head; this rose within the centre of the whirl. There was scarcely any wind at the time, but it moved generally in the direction of the current, (at that time from the SSW,) with perhaps about half its velocity. The *largest* pieces raised (as well as the smallest) moved spirally, but these were not carried many inches. It travelled about three hundred yards, and I then lost sight of it behind some trees: it was at that time increasing in height. I was within two hundred yards of it when it raised the heaviest pieces. It happened, I should have told you, at about noon on Tuesday, August 4, the day very hot, Fahrenheit's thermometer at about 89° in the shade. Numerous small *Cirrocumulus* and dense *Cirrus* clouds at a very great elevation, thin streamers directed to NW, N, and NE.

The above, if at all interesting, is much at your service.

I remain respectfully, yours,

Peckham, Aug. 5, 1818. JOHN WALLIS.

A Tornado passed over the village of *Howell*, in Lincolnshire, last week. It appeared like a body of smoke, was preceded by a small black cloud, passed very near the earth, and completely unroofed a low building, and tore the boughs from the trees as it passed, and carried them a considerable way. Coming in contact with a large ash tree, it split a piece from the trunk twelve feet long, and as thick as a man's body, carrying it at least one hundred yards.—PUB. LEDGER, *Aug.* 8.

On Friday evening, (Aug. 7,) when a moment before there appeared to be a perfect calm, the inhabitants of *Croydon*, near the church, were thrown into alarm by the sudden rising to a great height in the air, of fourteen pieces of cloth that had been pegged down in the bleach-ground of Messrs. S. and T. Starey, one piece of which was so twisted round the steeple of the church, that it required a great length of time to disentangle it.

Scotland.—A singular and very beautiful phenomenon took place in the atmosphere on Saturday se'nnight soon after the commencement of the thunder-storm, immediately above the Clyde, and a little to the west of Mauldsie Castle. At one o'clock the clouds in the atmosphere seemed to rush with much rapidity to one common centre, and soon after, a large inverted cone was formed, hanging perpendicular to the horizon, which moved round upon its centre with great velocity, for upwards of six minutes. It then changed its position, and from perpendicular became horizontal; and what had formed the lower point of the cone, formed a figure like a large wheel, and rapidly turned round upon its axis, throwing off, as it were, large flakes of transparent white clouds, like wool or cotton. After moving in that position for six or eight minutes, the motion decreased, and the cone was absorbed in the contiguous clouds. A very black and dense cloud had continued moving in a south direction, to the place of attraction, during the whole time of this phenomenon, (which was in all about half an hour,) and very soon was seen falling down in large torrents of rain. Immediately before this phenomenon was observed, a large fire-ball was seen to dart from the atmosphere, near the part which became the place of attraction.—EDINBURGH PAPER.—PUB. LEDGER, *Aug.* 12.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 8mo. Aug. 23	N	30·20	30·15	30·20	30·15	66°	58°	50	
24	SW	30·15	30·07	30·15	30·05	71	56	42	
25	NW	30·07	29·95	30·05	29·91	72	50	45	
26	NW	29·95	29·75	29·91	29·70	75	55	47	
27	W	29·75	29·60	29·70	29·60	68	60	43	10
28	NW	29·94	29·65	29·95	29·65	73	53	52	
29	W	29·94	29·86	29·95	29·82	80	58	48	
30	W	30·00	29·86	30·00	29·82	76	40	52	—
31	E	30·00	29·49	29·98	29·48	75	55	50	
9 mo. Sept. 1	SW	29·70	29·49	29·75	29·47	74	49	50	2
2	SW	30·07	29·70	30·06	29·75	71	50	52	—
3	SW	30·05	29·92	30·05	29·92	71	61	48	—
4	S	29·99	29·96	29·98	29·95	75	63		9
5	W	29·96	29·70	29·97	29·69	68	55	66	95
6	W	29·85	29·70	29·83	29·70	69	55	65	2
7	NW	29·92	29·85	29·93	29·83	64	45	46	
8	Var.	29·90	29·60	29·92	29·61	65	40	60	—
9	NW	29·68	29·59	29·75	29·60	63	43	65	1
10	NE	29·85	29·68	29·85	29·75	61	39		
11	NW	30·00	29·85	30·00	29·85	60	42		
12	NW	30·20	30·00	30·18	30·00	66	48		
13	N	30·30	30·20	30·30	30·18	68	41		
14	SW	30·25	29·75	30·22	29·75	67	58		
15	SW	29·75	29·60	29·75	29·59	59	43	50	25
16	NW	30·10	29·60	30·10	29·60	56	39	60	12
17	N	30·20	30·05	30·20	30·10	57	41	57	
18	NW	30·05	29·85	30·10	29·84	63	51	72	—
19	S	29·85	29·58	29·84	29·55	67	50		2
20	SE	29·58	29·38	29·55	29·37	61	44	60	—
21	SE	29·63	29·32	29·64	29·33	69	49	70	13
		30·30	29·32	30·30	29·33	80	39	54	1·71

NOTES.—Eighth Mo. 23. Morning very clear: mid-day *Cumulus* beneath large *Cirri:* p. m. inosculation, followed by a shower to the NW, which sent us a turfy odour with the wind. 24. *Cirrostratus,* followed by *Cumulostratus,* at times heavy; the wind veered to SW, p. m. 25. Large *Cirri,* directed from SW to NE. 26. *Cumulostratus* and *Cumulus* crossed by *Cirrostratus.* 27. The hygrometer advanced to 67°: gentle rain, a. m.: cloudy, p. m. 28. *Cumulus* and *Cumulostratus:* a little rain, evening. 29. *Cirrocumulus,* beautifully coloured at sun-set, in lake shaded with violet. 30. Some very light rain a. m.: fair, with fresh breeze after it. 31. Large plumose *Cirri.*

Ninth Mo. 1. Lowest temperature on the ground 44°. This morning from two to three, it thundered and lightened much to the SE: thunder-clouds prevailed a. m: wind SE, and a little rain: a slight shower again at night, and much dew after it: the hygrometer advanced to 80°. 2. After large *Cirri, Cumulostratus,* which inosculated about sun-set with a scanty *Cirrocumulus.* 3. A mixed sky, with a slight driving shower at evening: cloudy night. 4. A sweeping rain, early: hygrometer 80° at six a. m.: much hollow southerly wind: *Cirrocumulus,* followed by ill-defined *Cirrus* with *Cumulus;* and about five, p. m. a *Nimbus,* shaped like a low circular hay-rick, with a capped *Cumulus* by its side, on the NE horizon. 5. Much rain, for the most part small and thick. 6. Wet, cloudy morning: very turbid sky: hygrometer at 80°: calm air: in the evening, inosculation of *Cumulus* with *Cirrocumulus;* after which, frequent lightning between nine and ten, p. m. 7. Morning grey, with *Cirrocumulus:* sunshine followed, with inosculation of *Cumulus* and *Cirrostratus.* 8. Large *Cirri,* with fleecy *Cumuli:* the latter attached themselves, in their passage, to the smoke of the city, and appeared to disperse downwards into it. Thunder-clouds followed this appearance, and a smart storm passed in the S, from W to E, about five, p. m.: the crown of the nearest *Nimbus* reached our zenith, and we had a few drops; while it rained hard, with a bow in the cloud, within two miles of us. 9. Heavy *Cumulostratus:* and showers, p. m. 10. Fine breeze, with *Cumulus* and *Cirrus;* the latter survived the sun-set, and was kindled by the refracted rays with flame colour passing to red: calm at night, with hygrometer 45°. 11, 12, 13. Chiefly *Cumulus,* and *Cumulostratus* by inosculation: some fine grouping of the clouds at intervals: large *Cirri* at the conclusion. 14. A large meteor seen passing northward: windy night. 15. Cloudy, windy: hygrometer, 75°: wet, p. m. 16. Much dew: a rapid propagation of *Cirrus* from the S, followed by *Cumulostratus* and showers: during a heavy shower about nine, p. m. it thundered in the NW: the barometer stationary great part of these two days at 29·60 inches. 17—20. Windy at intervals, with *Cirrostratus,* turbidness, and driving rains. 21. Much wind, with showers: the sky turbid, and streaked with *Cirrostratus,* in a direction from SE towards NW: calm night.

RESULTS.

Wind for the most part Westerly, and moderate.

Barometer:	Greatest height .	30·30 in.	[By Clock 30·30 in.]
	Least . . .	29·32 in.	[.. 29·33 in.]
	Mean of the period	29·860 in.	[.. 29·851 in.]
Thermometer:	Greatest height .	86°	
	Least . . .	39°	
Mean of the period . .		58·60°	[Lab$^{y\cdot}$ 59·85°]
Mean of the hygrometer .		54°	
Evaporation . . .		2·33 in.	
Rain		1·71 in.	

The rains of this period, though absorbed by the parched ground as by a sponge, have completely restored vegetation in our meadows, which have resumed, in the space of a few days, a verdure equal to that of spring. The indications of this change of weather were not very striking: the chief of these being, probably, the sudden increase of temperature in the *nights* previous to the more considerable falls of rain.

TABLE CXLVIII.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 9 mo. Sept. 22	SE	29·70	29·65	29·70	29·64	69°	48°	80	
23	SE	29·65	29·53	29·64	29·52	61	53		20
24	SE	29·68	29·60	29·67	29·59	64	48	75	—
25	NE	29·65	29·33	29·63	29·32	65	51	66	1·22
26	SW	29·66	29·50	29·65	29·50	61	45	98	20
27	SE	29·65	29·52	29·65	29·50	64	54	100	—
28	SE	29·66	29·59	29·67	29·60	73	55	85	
29	SE	29·61	29·41	29·63	29·42	68	54		—
30	SE	29·47	29·40	29·49	29·40	63	51		25
10 mo. Oct. 1	SE	29·60	29·40	29·58	29·40	66	45		—
2	SE	29·65	29·50	29·65	29·50	68	51		—
3	SW	29·51	29·40	29·50	29·40	66	52		90
4	SW	29·50	29·36	29·50	29·36	66	47	61	15
5	W	29·37	29·19	29·39	29·20	58	41	63	7
6	W	29·50	29·25	29·50	29·24	60	32	64	
7	NW	29·79	29·50	29·76	29·50	59	32	82	
8	NW	29·88	29·79	29·87	29·76	57	34	89	
9	NW	29·85	29·64	29·85	29·65	60	46	78	
10	SW	29·64	29·48	29·65	29·48	63	51	71	13
11	SW	29·71	29·40	29·70	29·40	65	46	78	23
12	SW	29·91	29·71	29·90	29·70	61	44	65	
13	SW	29·98	29·86	29·99	29·85	66	47	71	
14	SE	29·99	29·91	29·98	29·91	70	52	74	—
15	SE	29·99	29·91	29·98	29·91	67	53	81	1
16	SW	30·09	29·99	30·10	29·98	71	51	71	
17	NE	30·10	29·92	30·10	29·92	68	43	79	
18	Var.	29·99	29·92	30·00	29·90	63	47	76	
19	NW	30·06	29·94	30·05	29·93	63	49	75	
20	SE	30·20	30·06	30·20	30·05	61	31	71	
21	NE	30·20	29·98	30·10	29·95	56	44	72	
		30·20	29·19	30·20	29·20	73	31	76	3·36

NOTES.—Ninth Mo. 22. *Cumuli* beneath a canopy of haze, showing as before rain, until evening, when the appearances gave place to *Cumulostratus* and red *Cirri*, followed by dispersion of the clouds, and fall of dew. 23. Much cloud, as yesterday, with wind: rain at dark. 24. Early morning wet. then fair, with various clouds, threatening rain at intervals. 25. Dew: grey sky, with the lighter modifications: overcast, p. m.: rain, evening and night. 26. Morning, wet: windy, with *Cumulus, Cirrostratus,* &c.: a *Nimbus* in the S, p. m.: rain after dark. 27. *Cumuli,* with an arch of *Cirrostratus* resting on their tops in the S: much dew: the dripping shrubs steam in the sunshine, and the breath is visible: *Cirri* in bundles succeeded, at two different elevations, the lower pointing NW and SE, the higher NE and SW: heavy clouds next advanced from the S, the vane being at SE: a shower ensued by inosculation, about noon: drizzling, p. m. 28. Grey morning: a beautiful stratum of small *Cirrocumulus,* between *Cirrostratus* and *Cirrus,* at different considerable elevations: the *Cirrus* proved permanent, and the day was fine. 29. Very high-coloured *Cirrocumulus* and *Cirrostratus* at sun-rise: fine. 30. Wet morning.

Tenth Mo. 4. Showers: evening fine: windy. 5. Clear morning: showery day: wind high. 6. Foggy morning: clear day: a *Stratus* on the marshes at night. 7. Very foggy morning: white frost. 8. Foggy morning: fine clear day. 9. Very foggy morning: cleared off about nine o'clock, a. m.: day fine. 10. Cloudy. 11. Cloudy, with slight showers: very boisterous night. 12. Morning calm and clear: day fine. 13. Fine day: a very distinct double lunar halo at night. 14. Fine day: clear moonlight. 17. Foggy morning. 21. Clear morning: very fine day.

RESULTS.

Prevailing Wind Southerly.

Barometer:	Greatest height .	30·20 in.	[By Clock 30·20 in.]
	Least . . .	29·19 in.	[.. 29·20 in.]
	Mean of the period	29·698 in.	[.. 29·676 in.]
Thermometer:	Greatest height .	73°	
	Least . . .	31°	
	Mean of the period	55·31°	
Mean of the hygrometer	. .	76°	
Rain	. . . . . .	3·36 in.	

⁂ The whole of the observations, except of the barometer, from the 1st to the 21st of the Tenth month, were made at the Laboratory, Stratford.

Coloured Sky at sunrise before rain.

Travelling on the night of the 2d of Tenth month from London to Ipswich, I was struck with the peculiar beauty of the coloured sky, as we entered the latter town, at sunrise. The whole hemisphere was overspread with *Cirrus,* passing to *Cirrostratus* and *Cirrocumulus,* having an arched lowering appearance; the whole dipt in a great variety of tints. The most conspicuous show was however made by dense *Cirrostrati* to the SE and E, which assuming first a deep blood red, passed next through crimson, and a gradation of lighter reds, to orange and then to flame colour. Though the morning was fine, the afternoon and night of the 3d proved very wet in these parts, as at Stratford.

Phenomena observed at Gosport, by Dr. William Burney.—*Thomson's Annals of Philosophy,* vol. xii. p. 368.

Sept. 1. A storm of rain, hail, thunder and lightning from two to half-past four afternoon. 5. A fall of rain, amounting to 1·33 in.; being as much as had fallen there in the preceding sixteen weeks. 16. A large *Lunar rainbow,* on an extensive *Nimbus* to the W; the harvest-moon being in the E, nearly at full, and about 10° above the horizon. 21—23. Strong gales from the S and SW, by day only. 23. From forty till fifty-five minutes after five p. m. a double rainbow in the E, when the sun was within two or three degrees of the W horizon. The interior bow appears to have measured 84° 30′ in diameter, and the exterior one being distant on each side 8° 22′ 30″, the total extent of the bow on the horizon from N to S, was 101° 15′. This measurement of the rainbow, the Doctor observes, is as wide as it can be, within nine minutes, according to the most accurate calculations: the bow was the finest in colours that he remembers to have seen.

25. Two coloured *parhelia:* each of them being at an equal altitude with the sun, which, at eight, a. m. was 19° 4′ 40″, and distant 23° 30′ from that luminary; the conspicuous halo in which they were formed was consequently 47° in horizontal diameter: they were caused by an attenuated *Cirrostratus* cloud brought from the southward.

26. About eight minutes before eight a. m. three coloured *parhelia* appeared in a coloured halo on a thin *Cirrostratus* that was passing very slowly in a NW direction. The two parallel with the Sun (at 18° above the horizon) were each 22° 35′; and the third, situate vertically, nearly 23° distant from the centre of his disc. The latter was formed by the intersection of a portion of another halo at the

top of the perfect one, and was the largest and most resplendent in prismatic colours of the three. These *parhelia* were in both cases followed by rain in the afternoon: and the appearance of the Solar halo on the 1st, 6th, 14th, and 22d, and of Lunar halo in the evening of the 17th, were in like manner succeeded by rain, in some instances in less than four hours after.

Oct. 2. At eight, p. m. a very brilliant meteor fell through a space of about 25°; it was of the apparent size of Jupiter, towards which planet it descended from the zenith. At one, a. m. several loud claps of thunder, with lightning, heavy rain, and strong gusts of wind. 7. A *Stratus*, with the first hoar-frost of the season, followed by a *parhelion* formed on a broad streak of *Cirrostratus*, a. m.: *Cirri* then appeared, succeeded by fleecy and dusky *Cumuli*, and lastly the *Cumulostratus*, which passed to *Nimbus* with a short shower.

8. At sun-set, fleecy and dusky *Cumuli* to the westward passed through orange, dark blue, lake and crimson tints, while the Eastern sky exhibited a rose colour, in an arch about 35° in height, with a purple base: this magnificent appearance, the Doctor observes, was evidently produced by reflection from a dewy haze descending in that quarter.

9. A single *parhelion* on a *Cirrostratus* without a solar halo, followed by a wet night.

In the valuable observations which I have here abridged, there will be found several points of comparison with my own. On the 1st of Ninth mo. *we* were sensible of a thunder-storm to the SE, preceding the one at Gosport in time by twelve hours—the distance between the two perhaps a hundred miles, along the South coast. The 5th was distinguished with us also by heavy rain. On the 7th of Tenth mo. the first *hoar frost* appears to have been noticed, together with the *Stratus* cloud, both at Gosport and Stratford. The remark on the appearance of the Eastern sky during the fall of dew on the 8th, is a confirmation, with the addition of a measurement of the height of the phenomenon, of several notes which I have at different times made upon it. There is likewise a description, by the same observer, of two beautifully-coloured parhelia in a preceding number of the Annals, vol. xii. p. 235, to which the reader is referred.

TABLE CXLIX.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a.m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 10mo. Oct. 22	SE	30·00	29·93	29·96	29·94	55°	41°	68	
23	E	30·07	30·00	30·05	29·96	55	45	71	
24	NE	30·07	30·02	30·05	30·02	55	44	70	13
25	SE	30·05	30·01	30·03	30·00	60	46	73	
26	SE	30·15	30·05	30·15	30·05	62	36	70	
27	SE	30·16	30·14	30·17	30·13	60	37	72	
28	SW	30·30	30·16	30·30	30·15	65	44	75	
29	SW	30·35	30·30	30·35	30·30	60	41	79	
30	SW	30·30	30·05	30·30	30·04	58	43	72	
31	SW	30·05	29·89	30·05	29·89	57	46	81	20
11 mo. Nov. 1	NW	29·93	29·87	29·94	29·85	58	45	75	
2	SW	29·87	29·70	29·85	29·70	60	51	77	2
3	SW	29·70	29·45	29·70	29·47	61	42	74	
4	SE	29·45	29·35	29·47	29·36	56	48	79	8
5	NE	29·35	29·24	29·36	29·23	60	52	82	1
6	E	29·60	29·26	29·60	29·23	58	50	77	
7	SE	29·87	29·60	29·86	29·60	51	35	75	3
8	E	29·94	29·87	29·95	29·86	52	42	78	
9	NE	29·98	29·95	30·00	29·95	52	44	81	
10	NE	29·95	29·72	29·95	29·73	50	45	79	86
11	SE	29·80	29·65	29·78	29·65	53	41	99	3
12	SE	29·65	29·53	29·65	29·53	50	41	80	6
13	SE	29·60	29·55	29·58	29·53	57	46	94	2
14	S	29·55	29·32	29·55	29·33	56	43	77	52
15	W	29·71	29·45	29·71	29·44	57	41	72	—
16	SW	29·70	29·44	29·72	29·42	52	41	96	43
17	NW	30·05	29·70	30·06	29·72	47	31	71	
18	SW	30·07	30·05	30·08	30·04	47	34	90	
19	SE	30·07	29·90	30·08	29·97	50	35	89	
20	SE	29·90	29·70	29·87	29·67	45	36	76	
		30·35	29·24	30·35	29·23	65	31	78	2·39

—Tenth Mo. 23. Windy. 24. Cold wind: some rain, 29, a. m. misty. (On the 26th, a little before eight in the observed from the neighbourhood of Lowestoft, Suffolk, a mmencement of *Aurora Borealis* in the north, in white scending to a considerable elevation, which after a minute me converted into a still light the latter, remaining for an after, was at length obscured by clouds.)

Mo. 1. Foggy morning. 6. Foggy evening. 7. Very 10. Much wind, with heavy rain in the night: about ten, lon' re passing over rapidly from SE. 11. Small rain, o' 12. The moon at night rose gold-coloured, and slightly veiled at intervals by the lighter modifications, with a mixture of haze: on these clouds were afterwards displayed a succession of halos, strongly coloured with green and red. I found, by attentive observation, that the halo in this instance, together with a corona, which appeared constantly within it, was not formed in the substance of the clouds above mentioned, but in haze, which was probably situated near the earth; for the colours of the halo always survived (though faintly) the passing away of the white screens of cloud by which at intervals they were set off and made conspicuous. 13. A fine day: large *Cumuli* beneath *Cirri,* the latter ranging at night from SE to NW very conspicuous: the moon again rose gold-coloured. 14. Rain, a. m., and again in the fore part of the night, with much wind from the southward. 15. Windy, cloudy, a. m.: lunar halo: rain in the night. 16. Wet morning: fair, p. m., with *Cirrus, Cirrostratus,* and *Cumulus.* 17—20. Fair: the sensible evaporation somewhat reinstated by a brisk wind at the close.

RESULTS.

Prevailing Winds Southerly and Easterly.

Barometer:	Greatest height	30·35 in.	[By Clock 30·35 in.]
	Least	29·24 in.	[.. 29·23 in.]
	Mean of the period	29·834 in.	[.. 29·832 in.]
Thermometer:	Greatest height	65°	
	Least	31°	
	Mean of the period	48·75°	
Mean of the hygrometer		78°	
	Evaporation	1·31 in.	
	Rain	2·39 in.	

The observations on the thermometer and rain for the former half of the period, and on the hygrometer for the whole, were made at the laboratory.

Observations made at Lowestoft.

I spent nearly the whole of the Tenth month with my family on this, the most easterly point of our island. After a heavy rain at the time of our arrival, we had a variety of fine autumnal weather: clear calm days with dew and gossamer—*Cumuli,* &c. with a brisk air—grey autumnal skies—and once, for three days, a gale at NE, with a uniform close canopy of *Cumulostratus.*

On this occasion I remarked that, at a temperature of 47° in the middle of the day, the air which blew directly from the sea, and carried with it an abundance of spray in a fine mist from the surf, was yet so dry, just out of this mist, that De Luc's hygrometer stood at 54 degrees, and evaporation proceeded rapidly. But at other times a *southerly* wind, coming along shore, was as moist as usual, giving 87° by the hygrometer. The mere *contact of the sea* in crossing from land to land does not therefore render the lower air so moist as we might suppose.

TABLE CL.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 11mo. Nov. 21	SE	29·70	29·67	29·71	29·65	40°	37°	64	
22	E	29·72	29·47	29·73	29·50	50	34	65	—
23	S	29·70	29·47	29·67	29·49	54	43	92	27
24	S	30·05	29·70	30·10	29·67	46	30	100	9
25	S	30·14	30·05	30·15	30·10	50	32	82	10
26	SW	30·32	30·10	30·33	30·10	54	48	93	13
27	SW	30·40	30·32	30·40	30·33	54	48	88	
28	SW	30·38	30·30	30·38	30·30	57	48	76	
29		30·30	30·20	30·30	30·20	58	46	75	
30	S	30·20	30·03	30·20	30·02	57	46	75	
12 mo. Dec. 1	SW	30·03	29·88	30·02	29·88	46	42	64	20
2	N	30·00	29·60	30·00	29·60	48	36	71	—
3	SW	29·60	29·45	29·60	29·42	49	35	100	
4	SW	29·42	29·37	29·42	29·37	47	40	76	
5	SE	29·57	29·42	29·57	29·42	51	33	74	
6	SE	29·58	29·27	29·58	29·28	51	40	77	
7	SW	29·65	29·27	29·66	29·28	54	44	81	30
8	SE	30·00	29·65	30·03	29·66	54	36	88	10
9	NE	30·10	30·00	30·12	30·03	46	32	76	40
10	NE	30·13	30·08	30·15	30·07	45	32	88	
11	NE	30·14	30·08	30·15	30·07	43	30	71	
12	NW	30·12	30·07	30·13	30·07	42	37	80	2
13	NE	30·18	30·10	30·20	30·10	41	31	69	
14	NE	30·20	30·15	30·20	30·15	43	33	87	
15	NE	30·15	29·96	30·15	29·96	40	23	78	
16	NW	30·17	30·00	30·16	30·00	32	16	78	
17	NW	30·12	29·82	30·13	29·80	28	18	79	
18	Var.	30·00	29·70	30·10	29·70	39	25	84	13
19	SW	30·25	30·00	30·24	30·00	43	29	86	
20	SW	30·10	29·90	30·10	29·90	47	43	73	1
		30·40	29·27	30·40	29·28	58	16	79	1·75

NOTES.—Eleventh Mo. 21. Fair: cloudy, with a strong breeze. 22. *Cirri* tending to *Nimbus*, a. m.: *Cumulus* beneath *Cirrostratus*: little wind. 23. Wet, gloomy, a. m. fair, p. m. : at sun-set, rose-coloured *Cirri*, with orange in the twilight. 24. Foggy morning: the dew frozen on the grass: the vane at SW. 25. A very dense *Cirrostratus*, a. m. forming a mist, which did not reach to the tops of the trees: a solar halo at 11: more clear in the evening: rain in the night: the wind SW to SE. 26. Wet, windy morning: fair and cloudy, p. m. and night. 27, 28. Cloudy. 29. Gloomy, fair, calm. 30. A breeze, with light clouds: fine, p. m. with *Cumuli*.

Twelfth Mo. 1. Rain in the night. 2. The vane at N, a. m. but in the night the wind came to SW, blowing fresh, with a little rain. 3. Vane at S in the morning, with much wind: cloudy. 4. Fair, windy, cloudy. 7. A drizzling rain through the day. 6. Hoar frost. 8. Showery, a. m. 9. Wet. 10—20. Chiefly fair and cloudy: at intervals fine, with the wind moderate: very white hoar frost on some of the latter mornings, with rime to the tops of the trees. Large lunar coronæ were frequent in the evenings, and the lunar halo occurred more than once; but the dates were not noted.

RESULTS.

Winds Variable.

Barometer:	Greatest height .	30·40 in.	[By Clock 30·40 in.]
	Least . . .	29·27 in.	[.. 29·28 in.]
	Mean of the period	29·929 in.	[.. . 29·930 in.]
Thermometer:	Greatest height .	58°	
	Least . . .	16°	
	Mean of the period	41·20°	[Lab^{y}· 41·53°]
Mean of the hygrometer .		79°	
Evaporation . . .		0·35 in.	
Rain		1·75 in.	

The few nocturnal frosts that occurred in the present season, up to the middle of the 12th month, were so slight as to permit the *nasturtiums* (the tenderest of our autumnal garden-flowers) to continue to vegetate: other indications of the mildness of the season were equally striking. I observed a horse-chestnut with tufts of new leaves and blossoms put forth from the ends of the branches all over the tree; but the severe nights, and some frost by day, since the 15th, have put a seasonable stop to vegetation. The temperature of the latter half of the period, and the hygrometer throughout, were noted at the laboratory.

STATE OF VEGETATION.

The extraordinary growth of mushrooms, this autumn, makes a kind of second harvest for the industrious poor in most parts of the island, some of whom have gathered from three to five pecks daily.

John Foster, Esq. of Newton, near Carlisle, has a single tree in his orchard which has, this year, produced *ten thousand* apples.—PUB. LEDGER, *Sept.* 28.

An apple-tree in the garden of D. Sutton, Esq. at Kensington, opposite Holland House, is now covered with a second full crop of apples; and there are several others in the same garden which have also had a second produce this year, though not in such abundance.—PUB. LEDGER, *Nov.* 12.

STOCKHOLM, *Nov.* 17.—The uncommonly serene and mild autumnal weather still continues, and now supplies us in abundance with garden produce, of which we were deprived during the summer by the great drought. To be without fire in the stoves, and to have the meadows covered with verdure instead of snow, is a strange phenomenon here in the month of November.

A thorn-tree growing in the lawn at Shugborough, the seat of Lord Anson, is now in full blossom, and the whole tree presents a May-like appearance.—*Dec.* 1.

There was lately, in the garden of G. Dickson, Esq. of Cousland, Berwickshire, (formerly the garden of the old Priory of Cousland,) a tulip-tree in full blossom, which is but the second time it was ever known to be in that state. The last time this tree was in blossom was in the year 1720, being 98 years ago.—*Dec.* 2.

Among the many instances of the extraordinary temperature of the present season, may be mentioned, that from the garden of Thomas Newton, Esq. of Clapham Common, green peas of full growth and flavour were gathered a day or two ago, and the haulm still remains in full blossom.—PUB. LEDGER, *Dec.* 18.

TABLE CLI.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a.m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
12th mo. Dec. 21	W	30·50	30·15	30·55	30·10	48°	24°	76	—
22	Var.	30·50	30·40	30·55	30·40	28	23	93	
23	NW	30·40	30·27	30·40	30·26	35	23	96	
24	Var.	30·27	30·10	30·26	30·10	28	22	87	
25	NE	30·10	29·82	30·10	29·83	38	26	88	
26	SE	30·05	29·80	30·07	29·80	35	30	72	
27	SE	30·47	30·05	30·45	30·07	39	32	78	
28	NE	30·60	30·47	30·60	30·45	41	30	69	
29	NW	30·58	30·47	30·60	30·46	38	22	81	
30	W	30·45	30·38	30·47	30·37	34	23	84	
31	NW	30·48	30·38	30·50	30·37	38	26	94	
1819. 1 mo. Jan. 1	NW	30·50	30·45	30·50	30·47	35	26	90	
2	W	30·45	30·30	30·47	30·35	38	30	90	
3	SE	30·30	30·15	30·35	30·20	42	24	75	
4	SE	30·17	30·11	30·20	30·11	40	22	95	
5	N	30·18	30·15	30·18	30·11	40	26	97	
6	Var.	30·15	29·76	30·18	29·90	45	32	95	
7	S	29·86	29·60	29·90	29·60	46	33	80	—
8	W	29·86	29·40	29·90	29·45	47	33	81	25
9	SW	29·87	29·43	29·60	29·39	51	34	72	36
10	SW	29·80	29·48	29·85	29·46	49	40	75	15
11	SW	29·60	29·48	29·80	29·46	46	34	98	11
12	SW	30·13	29·60	30·14	29·80	50	33	82	
13	SW	30·12	29·95	30·05	29·95	49	35	75	—
14	SW	30·00	29·85	29·96	29·84	53	37	88	—
15	SW	30·20	29·77	30·00	29·82	50	33	79	16
16	NW	30·31	30·00	30·30	29·80	50	34	61	—
17	SW	30·00	29·25	30·30	29·30	50	36	70	19
18	NW	29·80	29·28	30·00	29·25	43	32	71	
		30·60	29·25	30·60	29·25	53	22	82	1·22

NOTES.—Twelfth Mo. 21. Much wind about three, a. m. with a little rain: a very fine day ensued: *Cirrocumulus,* with bright sunshine. 22. White frost: foggy, a. m.; clearer p. m. with *Cirrus:* rime on the trees. 23. White frost: rime to the tree tops: misty, a. m.: sun very bright at noon: much fog to the south. 24. Very foggy: rime still on the trees. 30. White frost. 31. A very fine day.

1819.—First Mo. 1. Very foggy, with the addition of obscurity from smoke. 3. Fair: rather overcast sky. 4. Much rime on the trees: rather misty air. 5. Somewhat misty: the melted rime forming puddles under the trees. 6. Fine day: at night small portions of cloud were observed to pass swiftly under the moon. 7. The sun-rise was attended with a veil of *Cirrus* clouds passing to *Cirrostratus*, very red and lowering: about noon *Cumuli* and other clouds, with a gale and showers. 8. Fine day: night windy, with some rain. 9. Hazy, a. m. with *Cirrostratus* and wind: heavy showers, p. m.: very clear night. 10. Overcast soon after sun-rise, with wind: the fore part of the night very stormy. 11. A wet squall this morning: fair day, with *Cirrus* and wind. 12. Fair morning, with slight hoar frost: the gale has subsided. 13. Slight hoar frost: very fine day: at evening, windy again. 14, 15. Windy, with some showers. 16. A fine drying wind, a. m. with *Cirrus* and *Cirrostratus* in delicate striæ: also transient *Cirrocumulus* at a great elevation: a stormy night followed. 17. A very tempestuous day: the rain ceasing for a while, a. m. I observed *Cirrostratus* around large *Cumuli*, rising and separating, as if the shower had been produced by their previous inosculation: much wind in the night. 18. A fine, drying day, with the wind more moderate, and an overcast sky.

RESULTS.

Winds variable and gentle, with fogs in the fore part; in the latter strong South-west gales, with rain.

Barometer:	Greatest height .	30·60 in.	[By Clock 30·60 in.]
	Least . . .	29·25 in.	[.. 29·25 in.]
	Mean of the period	30·068 in.	[.. 30·071 in.]
Thermometer:	Greatest height .	53°	
	Least . .	22°	
	Mean of the period	35·86°	[Lab^{y}· 36·12°]
Mean of the hygrometer . .		82°	
Rain		1.22 in.	
Evaporation, about .		0·50 in.	

Extract of a Letter from Petersburgh.

Petersburgh, First Month 5, 1819.—The weather here is most extraordinary for this climate. It is now a thaw; a circumstance not remembered here at this date by any person living. Great quantities of the frozen meat brought from the interior are spoiling.—W. A.

Barcelona, Jan. 2.—For these ten days past we have experienced strong gales from the Eastward.

Dumfries, Jan. 15.—It has blown a very heavy gale from SW to W for six days past, but is now more moderate.

Port Glasgow, Jan. 17.—The weather still continues very tempestuous.

Penzance, Jan. 17.—A gale from W to WNW the whole day and night.

Portsmouth, Jan. 18.—No arrival or sailing. The whole of the day it has blown very strong from WNW.

OSTEND, *Jan.* 16.—It blew nearly a hurricane during the night from NW to N. —*Shipping List.*

TABLE CLI.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a.m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
12th mo. Dec. 21	W	30·50	30·15	30·55	30·10	48°	24°	76	—
22	Var.	30·50	30·40	30·55	30·40	28	23	93	
23	NW	30·40	30·27	30·40	30·26	35	23	96	
24	Var.	30·27	30·10	30·26	30·10	28	22	87	
25	NE	30·10	29·82	30·10	29·83	38	26	88	
26	SE	30·05	29·80	30·07	29·80	35	30	72	
27	SE	30·47	30·05	30·45	30·07	39	32	78	
28	NE	30·60	30·47	30·60	30·45	41	30	69	
29	NW	30·58	30·47	30·60	30·46	38	22	81	
30	W	30·45	30·38	30·47	30·37	34	23	84	
31	NW	30·48	30·38	30·50	30·37	38	26	94	
1819. 1 mo. Jan. 1	NW	30·50	30·45	30·50	30·47	35	26	90	
2	W	30·45	30·30	30·47	30·35	38	30	90	
3	SE	30·30	30·15	30·35	30·20	42	24	75	
4	SE	30·17	30·11	30·20	30·11	40	22	95	
5	N	30·18	30·15	30·18	30·11	40	26	97	
6	Var.	30·15	29·76	30·18	29·90	45	32	95	
7	S	29·86	29·60	29·90	29·60	46	33	80	—
8	W	29·86	29·40	29·90	29·45	47	33	81	25
9	SW	29·87	29·43	29·60	29·39	51	34	72	36
10	SW	29·80	29·48	29·85	29·46	49	40	75	15
11	SW	29·60	29·48	29·80	29·46	46	34	98	11
12	SW	30·13	29·60	30·14	29·80	50	33	82	
13	SW	30·12	29·95	30·05	29·95	49	35	75	—
14	SW	30·00	29·85	29·96	29·84	53	37	88	—
15	SW	30·20	29·77	30·00	29·82	50	33	79	16
16	NW	30·31	30·00	30·30	29·80	50	34	61	—
17	SW	30·00	29·25	30·30	29·30	50	36	70	19
18	NW	29·80	29·28	30·00	29·25	43	32	71	
		30·60	29·25	30·60	29·25	53	22	8[illegible]	1·22

Notes.—Twe o. 21. Much wind about thre
ittle rain: a ver ay ensued: *Cirrocumulus*.
hine. 22. Wh foggy, a. m.; cleare
me on the trees hite frost: rime to
m.: sun very oon: much fog
ggy: rime stil es. 30. White
1819.—First M y foggy, wi
n smoke. 3. overcast
s: rather mis

puddles under the trees. 6. Fine day: at night small portions of cloud were observed to pass swiftly under the moon. 7. The sun-rise was attended with a veil of *Cirrus* clouds passing to *Cirrostratus,* very red and lowering: about noon *Cumuli* and other clouds, with a gale and showers. 8. Fine day: night windy, with some rain. 9. Hazy, a. m. with *Cirrostratus* and wind: heavy showers, p. m.: very clear night. 10. Overcast soon after sun-rise, with wind: the fore part of the night very stormy. 11. A wet squall this morning: fair day, with *Cirrus* and wind. 12. Fair morning, with slight hoar frost: the gale has subsided. 13. Slight hoar frost: very fine day: at evening, windy again. 14, 15. Windy, with some showers. 16. A fine drying wind, a. m. with *Cirrus* and *Cirrostratus* in delicate striæ: also transient *Cirrocumulus* at a great elevation: a stormy night followed. 17. A very tempestuous day: the rain ceasing for a while, a. m. I observed *Cirrostratus* around large *Cumuli,* rising and separating, as if the shower had been produced by their previous inosculation: much wind in the night. 18. A fine, drying day, with the wind more moderate, and an overcast sky.

RESULTS.

Winds variable and gentle, with fogs in the fore part; in the latter strong South-west gales, with rain.

Barometer:	Greatest height .	30·60 in.	[By Clock 30·60 in.]
	Least . . .	29·25 in.	[.. 29·25 in.]
	Mean of the period	30·068 in.	[.. 30·071 in.]
Thermometer:	Greatest height .	53°	
	Least . .	22°	
	Mean of the period	35·86°	[Lab^y. 36·12°]
Mean of the hygrometer . .		82°	
Rain		1.22 in.	
Evaporation, about .		0·50 in.	

Extract of a Letter from Petersburgh.

Petersburgh, First Month 5, 1819.—The weather here is most extraordinary for this climate. It is now a thaw; a circumstance not remembered here at this date by any person living. Great quantities of the frozen meat brought from the [illegible] are spoiling.—W. A.

Jan. 2.—For these ten days past we have experienced strong gales [illegible]

[illegible] has blown a very heavy gale from SW to W for six days [illegible]rate.

[illegible] The weather still continues very tempestuous.

[illegible]m W to WNW the whole day and night.

[illegible]al or sailing. The whole of the day it has blown

[illegible]y a hurricane during the night from NW to N.

TABLE CLII.

1819.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 1 mo. Jan. 19	NW	29·80	29·45	29·81	29·55	44°	33°	66	19
20	W	29·57	29·28	29·58	29·30	41	33	70	9
21	W	29·52	29·20	29·53	29·30	40	32	66	
22	SW	29·72	29·20	29·51	29·22	49	34	89	—
23	SW	29·72	29·60	29·65	29·22	45	33	75	
24	SE	29·60	29·20	29·69	29·50	47	36	90	
25	SE	29·43	29·10	29·50	29·20	47	39	74	26
26	SE	29·45	29·35	29·42	29·09	47	35	83	
27	E	29·44	29·35	29·47	29·40	49	38	96	
28	SE	29·52	29·30	29·43	29·30	50	31	85	
29	E	29·52	29·35	29·52	29·32	50	30	97	
30	E	29·40	29·28	29·46	29·27	42	33	88	43
31	NW	29·62	29·40	29·50	29·25	42	25	78	—
2nd mo. Feb. 1	SW	29·60	29·49	29·60	29·50	38	28	85	—
2	NW	29·73	29·49	29·62	29·50	38	18	90	—
3	SE	29·73	29·42	29·75	29·55	41	25	88	—
4	NW	29·80	29·47	29·80	29·60	43	31	75	29
5	E	29·78	29·46	29·60	29·56	47	35	95	12
6	W	29·61	29·39	29·60	29·32	50	36	85	17
7	NW	29·65	29·35	29·90	29·32	47	33	68	
8	W	30·00	29·65	30·00	29·80	46	34	72	
9	SW	29·95	29·63	30·00	29·55	51	44	85	37
10	NW	30·05	29·58	30·07	30·00	49	36	69	
11	W	30·03	29·79	29·98	29·55	51	34	72	
12	W	29·79	29 50	29·75	29·52	48	33	69	—
13	NW	29·90	29·62	30·10	29·75	47	27	64	14
14	NW	30·12	29·90	30·11	29·90	47	25	64	
15	SW	30·08	29·70	29·90	29·50	47	34	65	
16	S	29·70	29·37	29·52	29·35	51	42	69	10
		30·12	29·10	30·11	29·09	51	18	78	2·16

NOTES.—First Month. 19. *Cirrus* with *Cirrocumulus*, in lines stretching N and S: rain in the night. 20. A very fine day: *Cirri* p. m. rain and wind in the night. 21. Slight hoar-frost: *Cirrocumulus*. 22. Fair day: rain and wind, evening. 23. Very fine. 24. Fair: strong breeze: cloudy. 25. Rain. a. m. 26. Fair day: large *Cumuli* appeared, passing to *Cumulostratus* with plumose *Cirri* above: at evening there were indications of the *Stratus*. The *Nimbus* has been frequent during the past week: the wind generally moderate in the day, and strong the fore part of the night. 29. Morning rather over- : day fine, with the light modifications ranging (as frequently e) in lines N and S. About ten, a. m. in going to London, I ved a solar halo of large diameter, imperfect in its superior and inferior part, except a trace at the vertex, but exhibiting, in the points directly N and S of the sun, *two parhelia,* which continued with a faint variable brightness for about twenty minutes. 30. Wet morning: drizzling most part of the day: wind SE, and then NE. 31. Overcast: rained a little, a. m.

Second Mo. 1. Hoar frost, with *Cirri* in the sky, pointing upwards from a base: drizzling rain at night. 2. *Snow* (for the first time this season) continuing most part of the forenoon from sunrise: then, brilliant sunshine, and frost at night, with the Thermometer nearly as low as the minimum of the present winter. 3. Rather misty and overcast, a. m.: wet evening. 4. Cloudy: fair, a. m.: showers p. m. 5. Misty, drizzling. 6. Very fine, with *Cumuli,* &c. a. m. in the afternoon, a squall of wind, with a few drops; in the night a gale followed by rain. 7. Very fine. 8. Fair, with *Cirrostratus* in parallel bars here and there, under uniform haze: at night a lunar halo, very large and colourless. 9. Wet day: stormy night. 10. Early this morning it was very tempestuous; but the day was fine, with *Cumuli* carried by a moderate gale, and *Cirri* scattered like loose hay above: at night, with *Cirrostratus,* a succession of small, ill-formed, but highly coloured halos. 11. Fine, with *Cumulus, Cirrostratus,* and wind. 12. Fine morning, then showers, (in London attended with hail,) and much wind at night. 13. Fine morning: *Cumulus* capped with *Cirrostratus: Nimbi,* p. m. with a transient rainbow. 14. Slight hoar frost: fine, with *Cumulostratus,* and a breeze. 15. Fine: the ground was frozen this morning, and *Cirrocumulus* at the same time above. 16. Overcast morning: wet and windy, p. m. and night.

RESULTS.

Winds Westerly, except a week about the New Moon, when they were East and South East.

Barometer:	Greatest height .	30·12 in.	[By Clock 30·11 in.]
	Least . . .	29·10 in.	[.. 29·09 in.]
	Mean of the period	29·522 in.	[.. 29·578 in.]
Thermometer:	Greatest height .	51°	
	Least . . .	18°	
	Mean of the period	39·36°	
Mean of the hygrometer .		78°	
Evaporation . . .		0·65 in.	
Rain.		2·16 in.	

Falmouth, Jan. 24.—A strong gale all last night from the SW, with heavy squalls of hail and rain. 25. A heavy gale the whole day from SW to WSW.

Hull, Jan. 25.—A heavy gale from SE. 26. More moderate, from WSW.

Portsmouth, Jan. 25.—A very heavy gale the whole day, with tremendous gusts from the Southward.

Deal, Jan. 25.—Two p. m. Wind S, blows hard, and a tremendous sea.

St. Ubes, *Jan.* 28.—The weather changed between the 23d and 24th at night, and ever since has continued extremely stormy, with rain and hail, thunder and lightning. A severe shock of an earthquake was felt, and afterwards another not so violent.—*Shipping List.*

Milford, Feb. 15.—All the vessels bound round land sailed yesterday with the wind at NNW: the wind shifted during the night to the Southward, and they are put back. 16. It blows hard from the SSW.

TABLE CLIII.

1819.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 2 mo. Feb. 17	SW	29·54	29·35	29·62	29·38	52°	39°	64	30
18	NW	29·62	29·30	29·60	29·17	49	42	90	9
19	SW	29·85	29·15	29·85	29·35	51	31	80	—
20	SW	29·85	28·90	29·60	28·89	52	36	69	23
21	N	29·90	28·90	29·95	29·45	49	38	65	13
22	Var.	29·97	29·33	29·90	29·30	45	34	67	35
23	SE	29·53	29·33	29·78	29·60	45	28	76	27
24	NW	29·75	29·40	29·60	29·40	45	23	67	8
25	NW	29·80	29·52	29·80	29·60	41	27	75	
26	SW	29·52	29·31	29·80	29·37	39	30	68	6
27	Var.	29·31	29·25	29·27	29·17	45	37	89	7
28	SE	29·26	29·14	29·27	29·17	40	34	78	—
3rd mo. March 1	NE	29·30	29·17	29·22	29·13	41	34	87	54
2	E	29·61	29·30	29·46	29·22	44	35	94	11
3	NE	29·90	29·61	29·80	29·46	39	34	65	
4	NE	29·98	29·87	29·97	29·80	45	34	62	7
5	NE	29·97	29·83	30·00	29·85	47	40	83	
6	NE	30·10	29·90	30·03	29·84	50	36	85	
7	NE	30·16	30·10	30·16	30·02	46	37	66	
8	NE	30·12	30·08	30·17	30·00	46	30	81	
9	SE	30·13	30·10	30·18	30·08	47	27	67	
10	NW	30·10	30·04	30·15	30·03	46	34	82	
11	NW	30·10	30·07	30·10	30·02	51	42	74	
12	NW	30·31	30·16	30·24	30·10	51	41	65	
13	NW	30·34	30·29	30·35	30·24	48	40	61	
14	Var.	30·30	30·14	30·34	30·25	48	24	59	
15	NE	30·14	29·29	30·24	30·04	57	34	67	—
16	W	30·13	29·98	30·02	29·98	59	40	85	—
17	NW	30·25	30·13	30·20	30·01	46	27	60	—
18	NW	30·15	29·45	30·24	29·85	49	35	63	
		30·34	28·90	30·35	28·89	59	23	73	2·30

NOTES.—Second Mo. 17. A fair day, with *Cumulostratus:* rain by night. 18. Fine and spring-like: *Cumuli* capped with *Cirrostratus*, a. m.: very stormy night. 19. After a squall in the morning, a very fine day, with large *Cumuli* and *Nimbi:* a full bright rainbow at three p. m.: the wind settled by evening. 20. Hoar frost: very fine morning: p. m. large ramified *Cirrus* mixed with *Cirrocumulus* at a great height: *Nimbi:* some violent wet squalls in the night from the southward. 21. Large *Cumuli,* and much wind: showers. 22. Wind shifted to N: cloudy morning: *Cumulostrati* by inosculation. 23. Wind and rain: of the latter, 0·35 in. between six and nine, and 0·27 in. more by noon: afternoon, a gale, with much cloud: evening more settled. 24. Fine morning: at noon, lofty large *Cumulostrati*, with bright sun: in the course of the afternoon, an obscurity, like the crown of the *Nimbus*, came down upon these clouds; and a considerable fall of *snow* took place before dark, with wind. 25. Snowy morning: the hills white with snow; which soon vanished before a bright sun, p. m. 26. *Cirrocumulus* appeared above, while the ground and water were frozen: about half-past ten a faint, but large *solar halo*, which continued till near eleven, when obscurity came on from the southward, followed by drizzling rain, p. m. 27. Overcast morning: rain in the night. 28. Cloudy: some rain.

Third Mo. 1. Snow and sleet, a. m.: a wet day. 2. Wet morning: cloudy, drizzling day. 3. A moderate easterly gale, with much cloud: a gleam of sunshine, p. m.———18. There has been scarcely any rain since the 4th; the sky mostly grey, with light clouds; at times overcast, or filled with *Cumulostratus:* the wind northerly, breezes, and the air drying; so that the roads at the close of the period, notwithstanding some very light showers of late, remained considerably covered with dust. The diverging bars of light and shadow, produced by the sun's rays passing through the interstices of clouds, have been several times exhibited within these two days.

RESULTS.

Winds for the most part Northerly.

Barometer: Greatest height .	30·34 in.	[By Clock 30·35 in.]
Least	28·90 in.	[.. 28·89 in.]
Mean of the period .	29·768 in.	[.. 29·781 in.]
Thermometer: Greatest height .	59°	
Least	23°	
Mean of the period .	40·78°	
Mean of the hygrometer . .	73°	
Evaporation	0·66 in.	
Rain	2·30 in.	

Weymouth, Feb. 21.—It blew very hard last night from the SW.

Falmouth, Feb. 21.—It has blown a heavy gale all day, WNW.

Torbay, Feb. 22.—All the vessels sailed this morning with the wind at N, after having experienced a tremendous gale at W, all yesterday.

Deal, Feb. 23.—It has blown very strong the whole morning from SSW: at three p.m. suddenly shifted to due N: five, p.m. blows very strong.

Falmouth, Feb. 23.—It has blown very heavily all day from the N and NW. 24. It has blown very heavily all day and continues unabated, from the N.

March 3.—The wind has been very high all day, and is much increased since dark, from the Eastward.—*Shipping List.*

TABLE CLIV.

1818.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L. Q. 3 mo. Mar. 19	Var.	29·50	29·21	29·85	29·22	51°	38°	90	16
20	NW	29·75	29·50	29·62	29·22	46	37	[illegible]	—
21	NW	29·80	29·75	29·80	29·62	48	32	59	
22	NW	29·80	29·70	29·80	29·75	53	35	63	
23	S	29·70	29·49	29·75	29·60	51	42	61	
24	SW	29·62	29·49	29·60	29·49	58	44	77	—
25	SW	29·85	29·64	29·62	29·45	55	37	67	—
26	W	29·90	29·85	29·95	29·60	54	40	68	—
27	SW	29·90	29·73	29·97	29·83	55	46	59	—
28	SW	29·77	29·68	29·82	29·72	54	46	85	59
29	SW	29·96	29·67	29·75	29·67	57	43	67	—
30	SW	30·07	29·96	30·00	29·75	58	50	69	
31	SW	30·18	30·07	30·12	30·00	59	47	69	8
4 mo. April 1	W	30·20	30·15	30·17	30·12	62	48	61	
2	W	30·15	30·05	30·20	30·13	68	36	66	
3	N	30·17	29·99	30·13	30·00	68	43	67	
4	E	30·17	30·07	30·18	30·00	60	38	61	
5	NE	30·06	29·94	30·10	30·05	60	29	61	
6	SE	29·94	29·60	30·05	29·70	54	43	60	
7	E	29·80	29·62	29·72	29·63	66	46	60	10
8	NW	30·00	29·80	29·90	29·72	58	40	74	33
9	N	30·07	29·95	30·07	29·90	61	34	77	
10	W	29·95	29·35	30·07	29·62	64	40	66	
11	SW	29·35	29·27	29·62	29·26	60	37	66	14
12	NE	29·30	29·12	29·26	29·20	50	43	74	35
13	Var.	29·48	29·12	29·42	29·10	58	40	85	3
14	SW	29·48	29·30	29·48	29·39	60	42	74	—
15	SW	29·40	29·03	29·40	29·30	60	45	76	—
16	S	29·40	29·03	29·32	29·02	58	44	68	45
		30·20	29·03	30·20	29·02	68	29	68	2·23

NOTES.—Third Mo. 19. A moderate gale at SW in the early morning, with much cloud carried by the wind. About ten, the wind changing suddenly to NW, the whole mass of cloud to the southward became an immense *Nimbus*, the base reaching from the SW to the NE. with a lighter sky visible beyond: at the same time precipitation · on overhead, and we had soon a smart shower mingled with whole ended in a uniform veil of *Cirrostratus*, and at night SW wind again pretty strong. 20. The wind changed a. m. with much cloud, and some drops of rain. 21. Fine day: a smart breeze from NW. 22. Fine day. 23. A trifling shower. 24. Wet, windy morning: fair day. 25. A shower with hail at midday: a large *Nimbus* passed, and a distant peal of thunder was heard to the NW. 26. Chiefly *Cumulostratus:* a very little rain, p. m. 27. Windy, with much cloud, and two or three showers. 28. Cloudy: a gale through the day. 29. Cloudy. 30. A rainbow at nine, a. m.: squally, with showers: the bow again twice about three, p. m. 31. Cloudy: some drops of rain.

Fourth Mo. 2. A lunar halo at night, of large diameter, and colourless: it was sensibly elliptical, the longer diameter being the perpendicular; it continued two or three hours. 3. Large *Cirri,* with *Cumuli:* much dew: very fine day. 4. *Cumulostratus.* 5. Fine morning: the hoar frost remained at seven, a. m. on some tufts of *Saxifraga cæspitosa,* &c. (as heretofore noticed) long after it had disappeared elsewhere in my garden; proving that the warmth which melted the ice came in this instance chiefly from the earth, and was here intercepted by a bad conductor. 6. Large plumose *Cirri,* with *Cirrostratus,* a. m. 7. The maximum of temperature for the past twenty-four hours occurred at nine this morning: thunder-clouds ensued, which soon passed to a quiescent mixture of different modifications, and rain came on at evening. 8. Much *Cirrostratus,* with pretty heavy rain, p. m.: at evening the wind changed to NW, with a rainbow and a turbid mixture of different clouds. 9. Fine, with *Cumulostratus:* wind N, p. m. 11. The clouds this evening were tinged with a strong lake colour, on the bases of *Cumulostrati,* beneath *Cirrus:* some rain attended. 12. Wet, most of the day. 13. Rain, a. m. 14. *Cumulostratus:* in the evening streaks of *Cirrus* from SW to NE, followed by wind and rain. 15. Clouds, followed by rain in the night, as before. 16. After a fine day with clouds, rain in the early morning.

RESULTS.

Winds chiefly Westerly.

Barometer:	Greatest height .	30·20 in.	[By Clock 30·20 in.]
	Least . . .	29·03 in.	[.. 29·02 in.]
	Mean of the period	29·738 in.	[.. 29·720 in.]
Thermometer:	Greatest height .	68°	
	Least . . .	29°	
	Mean of the period	49·10°	
Mean of the	hygrometer . .	68°	
	Evaporation . .	1·32 in.	
	Rain . . .	2·23 in.	

TABLE CLV.

1819.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q. 4 mo. Apr. 17	S	29·57	29·40			55°	43°	75	15
18	SW	29·76	29·57			58	36	62	4
19	W	29·76	29·72			57	47	64	44
20	SW	29·72	29·59			61	46	82	—
21	SW	29·79	29·59			59	42	72	—
22	NW	29·85	29·74			49	42	76	
23	E	29·74	29·51			51	46	90	15
24	E	29·65	29·51			52	45	100	25
25	NE	30·08	29·65			50	34	76	2
26	E	30·16	30·08			52	32	68	
27	E	30·16	—			56	25	62	
28	SE	—	30·05			60	31	60	
29	E	30·05	29·80			59	28	60	
30	SE	29·80	29·75			60	28	60	
5 mo. May 1	SW	29·75	29·68			66	33	57	
2	SE	29·68	29·57			69	48	52	
3	SE	29·57	29·45			71	49	58	—
4	SE	29·50	29·45			69	50	87	68
5	SE	29·88	29·50			65	44	69	
6	SW	30·00	29·88			64	39	62	
7	SE	30·00	29·98			66	49	67	
8	E	30·17	29·98			69	44	63	
9	SE	30·14	30·06			73	46	59	18
10	NW	30·14	30·10			69	53	65	
11	W	30·10	30·04			65	54	67	
12	NW	30·10	30·04			67	53	61	
13	NW	30·10	30·00			64	41	60	
14	NW	30·04	30·02			64	40	58	
15	N	—	—			67	42	59	
		30·17	29·40			73	25	67	1·91

[illegible] Fourth Mo. 17. Much wind in gusts, a. m.: the clouds [illegible] carried at a great elevation: *the first swallows appeared:* wet [illegible] some lightning about ten, and a gale through the night. [illegible] er modifications above, followed by *Nimbi* [illegible] about three, p. m.: the rainbow twice: [illegible] ostly cloudy, with *Cumulostratus:* the [illegible] erval. 23. Gloomy sky, with much [illegible] e night. 24. Drizzling, a. m.: wet [illegible] much cloud in the morning: fair,

p. m. 26. Fair with heavy *Cumulostratus.* 27, 28. Hoar frost: clear, fine days, with *Cumulus, Cumulostratus,* and *Cirrus.* The dark part of the moon's disk, which has been scarcely discernible this winter, is again plainly visible in the evening, as she follows the sun. 29. Hoar frost: fine day, with *Cirrus* and breezes.

Fifth Mo. 1. Fine: much *Cirrocumulus,* mixed with *Cirrus:* the wind a breeze. The gardens have suffered a little by the late frosts, more especially the gooseberry bushes, which have cast a part of their crop. 2. A superior westerly current appeared, a. m. carrying flocks of *Cirrocumulus*: between this and the SE wind below were large plumose *Cirri,* on one of which appeared a trace of a solar halo. These clouds increasing, with haze and *Cumuli* intermixed, the character of the sky became electrical: there was a lunar corona and a small bright halo at night, with some lightning to the SW. 3. Clouds grouped with an electric appearance as yesterday. 4. Obscurity and a little rain, a. m.: heavy showers, p. m.: rain in the night. 5. Fine, with *Cumulostratus.* 6. The same: *Cirrus* and *Cumulus* appeared: the smoke was attracted by the clouds, and a few drops of rain fell by inosculation among the latter, p. m. 7, 8. Clouds various, and mixed with haze: on the latter night, a very luminous large corona round the moon. 9. Large plumose *Cirri,* followed by obscurity and *Cirrocumulus,* with an electrical character: a fine shower at evening: rain in the night. 10—15. Fair, with the lighter modifications, and breezes.

RESULTS.

Wind Easterly in the middle, Westerly in the beginning and end of the period.

Barometer:	Greatest height	30·17 in.
	Least	29·40 in.
	Mean of the period	29·83 in.
Thermometer:	Greatest height	73°
	Least	25°
	Mean of the period	51·67°
Mean of the hygrometer		67°
	Evaporation	2 in.
	Rain	1·91 in.

Meteor.

A very remarkable Meteor was seen at Aberdeen, May 5th. At about *half-past twelve in the day*, it appeared at an altitude of nearly 36°, having the form of a ball of fire with a short tail, darting towards the earth. The atmosphere was uncommonly clear, with bright sunshine and no clouds. In about five minutes it exploded with considerable noise, leaving a small white cloud of smoke. It was seen in many parts of the country.—*Journal of the Royal Inst.* From a Scotch Paper.

TABLE CLVI.

1819.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
L.Q.5 mo. May 16	SE	30·08	30·02			72°	37°	59	
17	NE	30·02	29·86			75	40	59	
18	SW	29·86	29·70			69	50	60	48
19	NE	29·70	29·63			65	54	86	24
20	SW	29·63	29·59			63	51	71	40
21	SE	29·66	29·49			62	42	76	4
22	SE	29·90	29·66			70	39	70	
23	E	29·91	29·90			77	50	65	27
24	E	29·94	29·91			63	49	72	4
25	NE	29·91	29·90			65	47	72	
26	NE	29·92	29·91			60	40	70	
27	NE	29·91	29·87			63	42	63	
28	NE	29·93	29·89			60	33	60	—
29	NE	30·02	29·93			60	31	60	
30	NW	30·09	30·02			64	44	55	9
31	SW	30·13	30·09			64	46	62	5
6 mo. June 1	SW	30·10	30·09			70	53	64	
2	SW	30·10	30·06			70	47	67	
3	SW	30·06	30·00			72	56	61	
4	SW	30·06	29·95			72	45	71	9
5	SW	30·10	30·07			72	45	63	
6	SW	30·07	29·70			75	53	59	1
7	SW	29·72	29·68			66	47	65	
8	SE	29·66	29·63			70	46	62	1
9	S	29·72	29·67			75	51	62	
10	SW	29·97	29·72			72	46	59	25
11	W	30·04	29·97			70	47	63	
12	SW	30·09	30·04			70	37	60	2
13	SE	30·10	30·04			70	48	59	
14	SW	30·04	29·85			71	49	61	3
		30·13	29·49			77	31	64	2·02

NOTES.—Fifth Mo. 16, 17. Fine. 18—21. Rainy: hail in the showers on the latter day: *Cumulus, Nimbus, Cirrus.* 22. *Cirrostratus:* lightning at night to the north-west. 23. Fine day: rain in the night. [illegible] Cloudy. 28, 29. Frosty mornings. The *potatoes* [illegible] ably in their growing tops, the temperature having [illegible] lower on the ground than at the height of the ther[illegible]ers.

Sixth Mo. 1. Cloudy. 2, 3. Fine. 4. Showery. 10. *Nimbi*, very large and distinct: a thunder-shower about three, p. m. and a brilliant rainbow in the evening. 11. Fine. 12. Showers. 13. Fine. 14. Cloudy.

RESULTS.

Winds Easterly in the fore part, Westerly in the latter part of the period.

Barometer:	Greatest height	30·13 in.
	Least	29·49 in.
	Mean of the period	29·899 in.
Thermometer:	Greatest height	77°
	Least	31°
	Mean of the period	56·90°
Mean of the hygrometer		64°
	Rain at Stratford	2·02 in.
	Rain at Tottenham	2·29 in.

The observations above, two or three incidental articles excepted, are extracted from the register kept at the Laboratory. The clock having been out of order, and under repair, the observations by it are, in this and the last period, necessarily wanting.

A letter from *Palermo*, of the 4th of March, states that during the preceding fourteen days, the weather had been dreadful, and that three shocks of earthquake had occurred. Much mischief was done by the shocks in the southern part of the island, (of Sicily,) churches being thrown down and villages destroyed.—*Journal of the R. Institution.*

TABLE CLVII.

1819.	Wind.	Pressure.		By Clock.		Temp.		Hygr. at 9 a. m.	Rain, &c.
		Max.	Min.	Max.	Min.	Max.	Min.		
6th mo. June 15	SW	29·97	29·83			63°	42°	65	33
16	NW	30·12	29·97	30·08	29·95	62	45	61	2
17	NW	30·13	30·07	30·15	30·08	72	52	63	1
18	NW	30·14	30·05	30·11	30·02	67	52	82	45
19	NW	30·19	30·14	30·20	30·11	72	47	66	
20	NW	30·19	30·18	30·24	30·15	72	45	61	
21	NW	30·18	30·09	30·10	30·07	78	49	59	
22	NW	30·09	30·08	30·03	30·00	68	55	59	
23	NW	30·08	29·94	29·99	29·78	72	52	59	
24	SW	29·94	29·81	29·78	29·70	63	56	66	5
25	SW	29·93	29·72	29·73	29·57	66	55	75	—
26	S	29·74	29·69	29·70	29·56	67	48	69	—
27	Var.	29·74	29·73	29·67	29·60	65	50	70	30
28	NW	29·86	29·73	29·85	29·70	60	45	64	23
29	NW	29·86	29·79	29·84	29·70	70	54	63	
30	W	29·86	29·77	29·33	29·20	72	46	67	
		30·19	29·69			78	42	65	1·39

NOTES.—Sixth Mo. 15. Rain. 16, 17. Cloudy. 18. Wet, a. m. 19—23. Fine days. 24. Morning overcast: drizzling rain. 25, 26. Cloudy. 27. Frequent heavy showers: at sunset, strong shadows projected from behind a *Cumulus* or two, amidst a wild-looking sky: the clouds opposite the setting sun tinged to a very fine yellow. 28. Cloudy morning: a confused sky, exhibiting a mixture of *Cirrus, Cirrocumulus, Cumulus,* &c.: about eleven a. m. some hail ushered in a thunder-shower: the lightning was vivid at Stratford, and the thermometer fell 8° during the shower. Other thunder-showers succeeded, till one p. m. when there was a very heavy storm of large hailstones, which nearly covered the ground. This was attended with vivid lightning to the southward, and thunder at a small distance. 29. Overcast 30. Fine.

RESULTS (of the half period.)

Winds Westerly, and chiefly North-west.

Barometer:	Greatest height . . .	30·19 in.
	Least	29·69 in.
	Mean height . .	29·955 in.
Thermometer:	Greatest height . .	78°
	Least	42°
	Mean height . .	58·17°
	Rain at Stratford . .	1·39 in.
	Rain at Tottenham . .	1·63 in.
	Mean of the hygrometer . .	65°

With the preceding table ends the arrangement of these observations in lunar periods. Having continued them in this form until it became necessary to insert the last of the series in this work as first printed, I then came to the conclusion that it would be better to publish them, in the first instance, by the calendar month, which would facilitate their comparison with other registers: while my own object would be equally well secured by a subsequent exhibition of Results and Averages.

END OF THE SECOND VOLUME.

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